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FINANCIAL DEBACLE IN CHINA

It is an invidious subject to review Chinese Government finances; however, the importance of the budget and the influence of fiscal policies on China's economic life cannot be overestimated, and it is therefore necessary to learn more facts about the financial position of China.

On May 7 the budget of China was revised (cf. our issue of May 14, page 8) and total expenditures for 1947 were announced to be estimated at 20 trillion Chinese dollars. While details at that time were unavailable, the Chinese Finance Minister refusing to elaborate, it now transpires that total expenditures for the current year are believed in Govt circles of Nanking to come up to at least 25 trillion by the end of 1947. Out of the revised budget figure for expenditures of 20 trillion, about 7.2 trillion have been allotted to the Chinese Army, 6.4 trillion for reconstruction & rehabilitation (which probably to a good part conceals further allocations to the Army), 2.6 trillion for the civil Govt, and 3.8 trillion for other expenditures.

The Finance Minister of China estimated, on May 7, that revenue will total only 10 trillion, so that a deficit of 10 trillion will result. Reference was made in our issue of May 14 to Chinese Govt proposals regarding the reduction of this deficit; the general belief in informed Chinese business circles remains that internal loans and increased rates of taxation (the two principal hopes of Nanking to increase receipts) will not help to any considerable extent for the enhancement of revenue.

The Finance Minister admitted at a recent session of the People's Political Council of China (P.P.C.) that receipts were unsatisfactory and that no immediate relief can be expected. Many P.P.C. delegates delivered speeches which were extremely critical of their Govt. And it was clearly indicated by one or two delegates that internal conditions in China are such as to let one expect country-wide riots and eventual revolution.

It is a fact that tax receipts have been far behind any estimates, and this in spite of progressive inflation of CN\$. Evasion of direct and indirect taxes is carried on with increasing boldness, with the rich and powerful, the bureaucracy and the Nationalist Party stalwarts, paying only token sums. Tax collectors have acquired an odious reputation for misappropriation and conspiracy with taxpayers against the Govt.

Measures for Improvement

The financial authorities in China believe that the following measures will improve the revenue position: 1) encouragement of industry and trade so that their increased business will also lead to increased tax payments; 2) Increase of present rates of direct and indirect (such as salt, commodities) taxes; 3) Flotation of domestic loans and energetic campaigns to sell them to the public; 4) Sale of the remainder of Japanese and other confiscated properties; and sale of American surplus, lend-lease, relief goods; 5) Introduction of new forms of taxation, especially a tax on real estate and on investments which are

held by Chinese in foreign countries 6) Increase of Maritime Customs duties on most imports from abroad (excepting only those of vital importance for the continuation of production in China); this measure to be combined with the institution of protective Customs duties on such goods which can be defined "un-essential"; 7) Invitation to foreign capitalists to invest in China, and to participate in the purchase of Chinese domestic loans; 8) Negotiation for loans from foreign governments, esp. the U.S.A.

How far these measures can be expected to bring concrete results must be left to the judgment, and probably much more to the sympathy, of Chinese and foreign observers.

A New Currency

The public belief in the introduction of a new currency in China is played upon in the following way: first, Govt or Nationalist Party officials (like their last Party Congress) suggest a thorough currency reform, the establishment of "gold certificates," the end of inflation, etc; then a Govt spokesman, like the Minister of Information on March 19, declares: "As we have repeatedly stressed, no new currency will be created"; later again, on May 23, the Chinese Finance Minister declares that the Govt studies right now the problem of the introduction of a new currency in China; and so ad infinitum.

Much learned nonsense has been published in financial periodicals regarding the new gold or US\$ backed currency of China. Apart from the very fact that present conditions of civil war militate against this measure, it must be understood

that the policy of inflation in China alone enables the Govt to carry on, by the issue of ever more fiat scrip, Govt achieves the following: 1) Financing its expenditure requirements; 2) Reducing the purchasing power of the people; 3) Acquiring key productive, trading and transportation enterprises; 4) Devaluing completely its obligations in forms of bonds etc towards the investing public (by adopting the dollar for dollar basis of repayment).

Disloyal Officials

The extent of graft appears to be unbounded, and members of all the Govt departments are under suspicion. More and more official acknowledgment is made in public sessions of the various Yuans of China, the P.P.C., Provincial assemblies etc. The vernacular press is full with stories of grave cases of corruption by highly placed officials. The position is deteriorating in spite of a fair number of trials of officials guilty of graft, followed by executions or heavy sentences of imprisonment.

It seems that very many Govt employees sense the oncoming storm which may issue in great violence, the revenge of the outraged people and the overthrow of many who are now in power. It is particularly those bureaucrats who have acquired power only recently who are all-out opportunistic and regard their office as the best and quickest means to dispossess others and enrich themselves. These people have brought China's officialdom into almost complete national and international disrepute.

Repatriation of Flight Capital

The Chinese Govt has repeatedly asked foreign governments to co-operate by practically evicting Chinese investments from their respective countries. Private Chinese investors, who by preference keep some of their wealth in New York, have so far not heeded the threats or cajolement of the Govt in Nanking to surrender their foreign exchange holdings against CN\$ payments. The Chinese Finance Ministry is, however, not giving in to this sabotage, obstruction or lack of patriotic feelings (in the terminology of Nanking) on the part of Chinese investors. Somehow or other, all foreign investments of Chinese citizens will have to be surrendered to the Chinese treasury; all flight capital will be repatriated; but it remains to be seen what measures can be invoked and how efficiently they will be carried out. Recently there were clear suggestions made in Nanking that, within a short time, some "force" will be used to make the Chinese investors more amenable to "capital repatriation."

Land Taxes

The abuse of land taxation, in money or in produce, is an age-long affliction of the Chinese farmers

EXPORT & EXCHANGE CONTROL IN HONGKONG

EXPORT LICENCES FOR TUNG OIL AND TIN

Control of foreign exchange, which means to all intents and purposes in the present world the US\$, can only be effective if the proceeds from exporters' bills are surrendered to the Government. In Hong Kong, due to the character and basis of this Colony, very careful attention was paid by the local financial authorities to the problem of enforcing some sort of foreign trade control without interfering with the entrepot business. Cautious procedure was at all times advised which eventually allowed the operation of a virtually free exchange market.

However, the rehabilitation of the Colony has so well progressed that the introduction of export control over certain export articles could be attempted without any fear of hampering the Colony's transit trade.

The Government of Hong Kong is under the obligation to provide sufficient hard currencies for a large list of essential import requirements; for that purpose Government has to collect adequate amounts both for current financing of imports mostly from America, and for setting up a reserve fund. Importers have been consistently claiming that US\$ allocations made by the Exchange Control were not regarded as satisfactory; merchants were overlooking the fact

that local exporters evaded, with increasing success, their obligation of surrendering to Government 25% of their US\$ export bill proceeds at the official exchange rate.

Naturally, with declining US\$ receipts from export bills and reductions in overseas family remittances handled by local banks, the Exchange Control could not be expected to continue with US\$ allotments as requested by the importers. At the moment the Exchange Control together with the Dept. of Supplies, Trade & Industry is registering importers for the purpose of establishing import quotas and regularising the position of Hong Kong with regard to direct and transit import requirements (cf. our issue May 14, page 8).

A successful allotment of import quotas from hard currency countries is conditioned on adequate hard currency receipts. It is therefore necessary that the Exchange Control take some steps to secure the acquisition of US\$ funds in addition to the present low level of US\$ repayments.

Under the Defence Regulations 1940 (which have been, in 1946, extended for another 5 years as far as U.K. and for another 2 years as far as Hong Kong is concerned), Government has, through the Dept. of Supplies, Trade & Industry, introduced the control over exports. The "Export Control Order, 1947" was issued on May 19, but gazetted on May 24. This Order states that, with effect from June 9, the exports of tung (wood) oil and tin to the following countries are permitted only if an export licence issued by the Superintendent of Imports & Exports is obtained: U.S.A. and all territories under U.S. sovereignty; the Philippines; the Central American republics; Colombia; Ecuador; Venezuela; Canada and Newfoundland.

Export licences will only be given if the foreign exchange, i.e. US\$, received from the sale of tung oil and tin will be delivered to a local bank (a member of the Hong Kong Exchange Banks Association).

During recent months tung oil exports to U.S. amounted to about 66 percent of total Hong Kong exports to America. The position was reviewed in our issue of April 30, pp. 203/5. Tin shipments were negligible, and export control over tin has only little practical importance; it has been included in the export control order only on account of the international control which is exercised over tin.

Tung oil exporters, with few exceptions, sold their produce either in America, the principal buyer, or

War and civil war devastations and deprivations have cruelly punished the humblest of all Chinese, the toiling peasants who always live from hand to mouth. Land taxes have been collected, in many instances, for years and even a generation in advance; but every time the authorities in this or that particular region are short of cash, and they always are short of cash, they descend on the meek victims, and extort whatever cash they find and whatever rice and other produce there remains. Land taxes vary from Province to Province but the rate, whether 25 or 30%, does not matter; the tax collectors and more so the soldiery extract what they need.

P.P.C. delegates have cried out against these exploitations and demanded, in impotent rage, that "confiscations of the farmers' produce" be ceased forthwith. They also have dramatically declared that the big landowners always evade land tax payments, obviously forgetting that it is among other groups exactly these gentry who, and for whose benefit, the economy of China is managed.

E. J.

obtained from local financial brokers the value of their shipments at the unofficial exchange rate of US\$. The local Exchange Control may have been able to collect US\$ from no more than 10 percent of the tung oil exporters; it is hoped that from June 9 on—taking into consideration an inevitable amount of evasion by false declaration of tung oil exports—the Exchange Control will collect about 70 percent of all export bills.

Exporters of tung oil are permitted to utilise 75 percent of the landed cost of their produce in Hong Kong to finance imports into the Colony; exchange certificates will be issued to the tung oil exporters, however, if they are unable to use these funds for their own imports, they will be permitted to make other arrangements, that is to say they will be allowed to sell either to an importer here or to the bank the 75 percent of their export bills at the unofficial rate of exchange. In every case an application to the Exchange Control will be necessary.

The remaining 25 percent of the tung oil export proceeds will be bought by the bank on behalf of the Exchange Control at official rate of exchange which at the moment is about 23 percent lower than the unofficial (open funds) quotation. The tung oil exporter will obtain, provided that the relation between the two rates of exchange do not differ in June from the current level, about 4 percent less than he would cash in case of the absence of export control over tung oil.

The tung oil market is since many weeks in the doldrums, many exporters have been losing in shipping oil from here to New York where, upon arrival, no buyers appeared in a persistently slumping market. The current difference between the local price for tung oil and the New York price is about 15 percent; i.e. provided that buyers in New York actually take off the market Chinese tung oil at US 24½ cents per pound. If cost, insurance and freight are added to the local price (currently about US 21 cents), a decent profit can still be made. The above mentioned loss of tung oil exporters of 4 percent (resulting from the surrender of 25 percent of their export bills at the official exchange rate) may not prove a deterrent to business.

However, improved prices offered in Europe (U.K., Belgium, France etc.) are likely to induce exporters to ship their produce to sterling area countries as the HK\$ proceeds in such case may be somewhat higher than exports to America would yield.

The intention of the Exchange Control here is, of course, not to alter the direction of tung oil trade; However, the possibility must be considered that European countries who are financially within the sterling area could, taking advantage of the new

export control measures of Hong Kong, induce local exporters to ship to Europe their tung oil.

The Exchange Control is certainly aware of the new problems posed by the introduction of the Export Control Order 1947. It will require the closest study to observe the effects of the tung oil export control. If successful it will set a pattern for Hong Kong's export business with hard currency countries. If a partial failure it may lead to a different approach to the problem which is: how to collect an adequate amount of US\$ for the purpose of financing imports from America.

Exchange Control

Coinciding with the gazetting of the Export Control Order, 1947, the Financial Secretary of H.K. Government informed—in Circular No. 23, dated May 23—the members of the Exchange Banks Association of the procedure and methods regarding enforcement of the export control over tung oil and tin. The procedure will be as follows:—

Exporters of tung oil and tin have to complete a form in triplicate obtainable from the Dept. Supplies, Trade & Industry and to submit it to the Import & Export Dept. which will issue the export licence. The Import & Export Dept. will retain two copies of the application form while the third copy will be returned to the exporter who has to hand it over to the shipping company for their counter-signature. After shipment has been made, and not later than one week after the ship's departure from here, the copy of the export licence form will have to be produced to the bank named in the form. The export licence has to be accompanied by the bill of lading covering the shipment.

Methods of Payment

Following are methods of payment which are satisfactory to the H.K. Govt. Exchange Control. Banks are required to certify on the export licence form that payment has been arranged by one of the methods specified below.

- I. Goods invoiced in US\$, Canadian \$ or Philippine Pesos, and payment received through a bank in Hongkong, by:
 - (a) negotiating or sending for collection bill and/or documents drawn in the appropriate currency,
 - (b) remittance in the appropriate currency.
- II. Goods invoiced in sterling and payment received through a bank in Hongkong by negotiating a sterling bill on London drawn under a credit registered with the Bank of England providing for reimbursement by a sale of foreign currency, or by transfer from the

permitted £ account in the United Kingdom.

- III. Goods invoiced in sterling and payment received through a bank in Hongkong by:

(a) negotiating or sending for collection bills and/or shipping documents drawn in sterling on the country of destination of the goods, payment to be received in sterling from the permitted £ account in the United Kingdom.

(b) remittance in sterling, the sterling being received from the permitted sterling account in the U.K.

- IV. Goods invoiced in HK\$ and payment received through a bank in Hongkong by:

(a) negotiating or sending for collection bills and/or shipping documents drawn in HK\$,

(b) remittance in HK\$ either by a transfer from the HK\$ account in Hongkong of a bank in the country of destination of the goods; or a remittance received in Hongkong, the sterling with which the HK\$ are purchased provided from a permitted £ account or by sale to the Bank of England of the appropriate currency; or a sale to a bank in Hongkong of the appropriate currency.

(Note: Permitted sterling account means Canadian or American in the case of exports to Canada and Newfoundland, and American in the case of the other countries mentioned. Appropriate currency means Canadian or US\$ in the case of exports to Canada and Newfoundland, and US\$ or Pesos in the case of the others).

FINANCIAL NOTES

Enemy & "puppet" Properties

The Chinese Treasury expects large receipts from the public sale of Japanese and German properties seized after the end of war as well as from the disposal of real estate and factories previously owned by Chinese collaborationists ("puppets") with the Japanese. It appears from announcements made last year that by about September 1946 the larger part of enemy properties had been sold. Compare our issue of Dec. 18, 1946, page 9.

The bulk of enemy properties was located in Central China (Kiangsu, Chekiang and Anhwei provinces). The latest valuation by official sources indicate that CN\$1.2 trillion is an outside estimate as far as these

properties (incl. "puppet" properties) are concerned. The Chinese Govt already sold what could be disposed, at present only keeping some former enemy-owned cotton mills, wharves and godowns, valued at CN\$400 billions.

The total composition of properties taken over after the end of war in Central China is as follows: from Japanese owners CN\$863 billions, 72% of the total; from Chinese "puppets" CN\$295 billions, about 25%; and from German firms and individuals CN\$38 billion, or 3%. Industrial plants constituted the major portion; next came: raw materials, finished goods, gold bars and jewelry, residences, wharves, godowns, ships, motor cars and other vehicles, foodstuffs and fuel. Other seized properties included: school buildings, household furniture and bonds & securities.

From the unsold remainder only little relief for the large 1947 Budget deficit can be expected.

United States Surplus Goods

Another ray of hope in the balancing of China's 1947 budget deficit comes from the U.S. surplus goods which, under the August 1946 agreement, are to arrive in China during the current and the next year. To ascertain their sales value is very difficult in view of the fact that many of these surplus goods are not in good condition and are steadily, while waiting for shipment to China, deteriorating.

The director-general of the Board of Supplies, an agency created by the Executive Yuan for the purpose of handling U.S. surplus, Mr. P. Kiang, thinks that the total value may be around US\$500 million. So far goods valued at about US\$10 million have arrived, and about 60% of these were sold to the public, the remainder being used by the Govt and the Chinese Army.

The surplus goods, piled up from Hawaii to Okinawa, include: trucks, jeeps and other vehicles; construction materials; machinery; telecommunication equipment; electric equipment, medical supplies, textiles; chemicals; aviation equipment.

The director-general of the Board of Supplies (B.O.S.) stated that all goods, if disposable at all, will be sold "not under the black market prices," and that the sale of U.S. surpluses "is a completely money making proposition for the Chinese Govt."

The President of the Chinese Republic, Gen. Chiang Kai-shek, announced on March 21, that all enemy & puppet properties and U.S. surplus goods value between CN\$ 3 1/2 to 5 trillion. How much could be realised

if these properties and goods were sold, the President did not disclose.

Since the larger part of enemy properties already had been sold before the current budget deficit of CN\$ 10 trillion was discovered, and U.S. surplus goods are shipped, by very slow tempo, it is certain that only a fraction of the 10 trillion deficit for 1947 can be covered from these sources.

Furthermore it is to be anticipated that large quantities of U.S. surplus goods will never benefit the National Treasury on account of wide-spread graft and the notorious pilferage of gangs at the wharves of Shanghai.

In addition there will be considerable requirements by Govt and Army for the more useful items of U.S. surplus goods. While there are no ammunitions, weapons and war planes among the surplus goods from the U.S., much of the telecommunication and electrical equipment, medical supplies and textiles, vehicles and aviation parts will prove of very welcome and necessary value to the Chinese Army.

Travelling in China

According to the regulations by the Central Bank of China regarding the importation of foreign exchange into China (vide page 7, our issue May 14) travellers have to exchange their currencies into CN\$ at the official rate which at present is about 120-130 percent lower than the black market rate.

Chinese and foreigners leaving China are on the whole unable to purchase foreign exchange at the official rate and have, provided that they run the risk of confiscation and prosecution by the Court, to buy foreign currencies at the black market rate. The export of foreign currencies is, but for a token sum of US\$ 100 per person, prohibited.

Overseas Chinese visiting their ancestral places have much complained of this harsh rule; when entering China they have to surrender their foreign exchange at the rate of CN\$ 11,640 for US\$ 1, and when leaving China and intending to exchange the rest of cash unspent they are not accommodated by the Chinese banks and thus have to buy US\$ 1 at the current black market rate which, at the time of writing, is about CN\$ 27,000.

Purchase of US\$ & Gold by Central Bank

Shortly after the fixing of the exchange rate of CN\$ on Feb. 17, at CN\$11,640 for buying of US\$ and CN\$480,000 for one troy ounce of gold, officials of the Central Bank of China at Shanghai, Nanking, Peking, Tientsin etc. let the public

know, by the usual way of "having it leaked out," that very large amounts of US\$ notes and gold bars were exchanged by the public into CN\$. At times, so it was stated, exchange-anxious people besieged and besought the Bank to grant them CN\$ for their excommunicated US\$ and gold.

It was true that, for several days following the shock of Feb. 17, the overbought US\$ speculation had to turn in some of their US\$ holdings. At that time the black market, very much underground and intimidated, quoted about the same prices as the Central Bank. To judge by the various Chinese press reports at that time (until about middle of March), the Central Bank must have been embarrassed by the flood of US\$ offered for sale, and probably did not know where to take sufficient CN\$ from. Eventually, the printing presses could oblige.

It would be interesting to learn whether recently there were many US\$ holders standing in queue outside the Bank premises. The competition by black market operators, offering as much as 130 percent over the Bank's price, may presumably have reduced the throng.

Overseas Remittances

Following the "readjustment" of the foreign exchange rate (a recurrent Euphemism in China) of last Feb. 17, the overseas Chinese family remittances through the four Chinese Banks (Postal Remittance & Savings Bank, Bank of China, Overseas-Chinese Banking Corp., and Bank of Canton) increased considerably. As long as the official exchange rate and the black market rate were not differing too distinctly, a good many Chinese residents in America and Far Eastern countries remitted their family drafts through Chinese Banks. The largest remittances during March came from Chinese in British Malaya and not, as is commonly believed, from the U.S.

During the period of Feb. 20 to March 20, overseas family remittances, sent through Chinese banks, have been about double to threefold the previous average. The Postal Remittance & Savings Bank claimed to have received, during one month following the institution of the new exchange rate, slightly over US\$ 10 million; however, this figure must be viewed with some doubt. The financial potency of overseas Chinese is not so impressive.

The recent spectacular decline in the CN\$ on the black markets has, as observed many times during the previous and recurrent periods of CN\$ devaluations, caused a heavy reduction of overseas Chinese remittances through Chinese banks.

EXCHANGE & FINANCIAL MARKETS

The USS Exchange Position

Local demand for T.T. New York has been negligible during the past week; rates were concerned, not at all encouraging.

Some business was done at HK\$ 494-496 for large amounts while sellers of amounts under US\$5,000 were lucky to obtain HK\$490. Drafts mostly from overseas Chinese accumulated here and, with the financial chaos accentuated in China, increasing amount of family remittances from Chinese in America must be expected.

These drafts were only gingerly taken off the market. There are some brokers who buy them up and mail them or otherwise dispatch them (through trusted seafaring middlemen) to the U.S. The best customer, it appears, are the local Exchange Banks who are, with the permission of the Exchange Control of H.K. Govt, buying US\$ drafts at the official rate of exchange, provided that the importers can prove that they are bona fide entrepot traders.

The practice has also gained momentum that an amount of 10% in excess of the US\$ import exchange requirement is offered for purchase by the local importing firm to the banks. Thus the banks here are able to acquire US\$ drafts and bank notes to a larger extent than was previously the usage when only the exact amount of the American invoice was to be paid in US\$ to the bank who then opened a letter of credit for the local importer.

For trading requirements only the local unofficial US\$ market is amply stocked. The unfavourable balance of trade which Hongkong records with America (cf. our last issue, pages 17/8) is consuming only a fraction of the regular Chinese family remittances. It is actually the demand from non-merchant sources which sustains a high US\$ T.T. quotation. The flight capitalists from China were at one time taking many millions of US\$ off the local unofficial exchange market, however, those who had sufficient funds, including also the highly placed and very influential men and women of

China, have long ago arranged for the safe-keeping of their capital in the U.S. or elsewhere abroad. It is now only those people who are at present making money, and dreading the collapse of China's economy, who transfer their "savings" from China to safer shores. If this factor increased in extent and importance, the local T.T. market way again enjoy tightness.

There is another though small group of buyers in the local market to whom we once referred as "of extraneous provenance." They are flight capitalists from certain sterling areas who, finding it impossible to obtain cover elsewhere, make the necessary US\$ purchase in Hongkong. It appears, however, that those who desired to shift all or part of their funds out of the Empire and into the U.S. were not very many, and the current trend is in this connection definitely discouraging for the local US\$ bull speculation.

Further Weakening of CN\$

The progress of inflation in China is unabated; flight of capital continues and black financial markets operate in all major Chinese cities with increasing regularity.

Local spot and forward prices for CN\$ again recoded lower levels during the week under review (May 19-24) than during the preceding period. In spite of a manipulated scarcity of notes in Shanghai, which drove up monthly rates of interest on private loans at one time to over 40 percent, there was a great abundance of Chinese bank notes in Canton and practically all over South China.

Hong Kong also received very large shipments of CN\$ notes, both by ship directly from Shanghai (in spite of the Chinese Govt. prohibition, restricting the individual export of CN\$ to the equivalent of HK\$ 100 or less) and from Canton. The Shanghai shipments, totalling many billions, were all in new 10,000 notes and so-called "Customs Gold Units" (one "Unit" equalling CN\$ 20) amounting to CN\$ 5,000 and 10,000; the impression here was that the local native exchange

market was inundated with freshly printed Chinese money.

Considerable shipments of CN\$ arrived here via Macao; it appears that Canton money exporters find it more convenient to choose Macao as a transit place since it has, long ago, transpired that communications between Macao and Kwangtung are better organised than the ones directly between the Colony and the Chinese hinterland.

The Canton black markets were, without any molestation, transacting large exchange and bullion business. HK\$ rates went up and reached the all-time record of CN\$ 6,180. The native money market was, as stated above, very easy and buyers were anxious to get rid of their Chinese currency as quickly as possible. However, even a billion of CN\$ does not buy more these days than HK\$ 170,000 or less.

The Shanghai black markets, with some caution and wariness, transacted, during the latter part of the week, HK\$ at about CN\$ 6,200, US\$ between CN\$ 26,000 to 30,000, and gold between CN\$1½ to 1½ million per troy ounce.

The black market rate of CN\$ seems now to have settled down at about 130 percent over the official exchange rate. All Chinese Govt. measures, with and without secret service threats and illegal arrests, have proved futile in the face of inflation and a population quite anxious to preserve their savings from the corrosion of Govt.-planned devaluation.

The Canton-Shanghai Cross Rate

Only a few weeks ago the domestic remittance rate for CN\$ from Shanghai to Canton discounted Shanghai by about 20 to 25 per cent. We referred to this anomaly in peace times in our previous issues. Last week saw the slow and then determined come-back of the remittance rate until Canton and Shanghai quoted at par.

It was possible, within only 3 weeks time, to remit from Canton, say, one billion CN\$ to Shanghai, obtain there 1½ billion, and after a week or so remit this amount back to Canton at par, thus netting a profit of about 25 percent.

HONG KONG UNOFFICIAL EXCHANGE RATES (IN H.K. \$)

	Gold per Tael		Chinese National Dollar (per 1 million)		U.S.\$ (per 100)									
	High	Low	Spot	Forward	S'hai	Canton	Notes	Drafts	T.T.	I.C.\$	Guilder	Baht		
May											(per 100)			
19	263	259	189	180½	145	137½	162	176	465	475	500	12.80	27.80	20.70
20	262½	259¾	184	181	142	138¾	168	178	464	472	498	12.90	27.30	20.80
21	264	261¼	185½	182	145	138¾	165	175	465	473	496	12.70	27.30	20.80
22	264	261½	184	180½	141¼	135	165	170	468	473	495	12.60	26	20.90
23	263¾	261¾	182	175½	142½	136¼	162	162	467	473	495	12.60	24.80	21
24	262½	261¼	169	165	130	125	151	153	466	469	495	12.50	26	21

The external instability of CN\$ is expressed in terms of ever mounting foreign exchange rates and is inevitable as a consequence of inflation in China; however, the instability of the various domestic exchange rate—within territory under control of the Govt in Nanking—is definitely another proof for the morbid state of China's economy today.

Business between various cities in Central and South China assumes, through the hazard of fluctuating native exchange rates, increasingly the character of gambling and, as a consequence of such peculiar conditions, the merchants cannot be satisfied with moderate profits but, in order to make provisions for future losses in exchange, are compelled to overcharge heavily.

The Canton remittance rate at the beginning of the week under review discounted the Shanghai \$ by about 8.9 percent; towards the end of last week the discount was reduced to 1 percent and then ceased altogether.

The manipulation of the money markets in China, for which the powers that be in China have to answer, is so crude that nobody can be deceived about the profiteering intentions of those who rig the markets. With much erudition the financial experts in Shanghai once point out that the "money market turned tight" but then swings towards "the easy side"; simultaneously, with dignified terminology, these professional obfuscators expound that elsewhere the "technical position" develops conversely. The upshot of the whole development is that fantastic profits are made in a business peculiar to the Chinese, viz by transforming money into a commodity.

Even experienced merchants do not realise well the system of this game; they are only concerned with the "fluctuations" of the various discounts and premia of the CN\$ in China, taking it for granted that, unique as China always presumes to be, such "fluctuations" just have to happen.

The recent ramp in the Canton-Shanghai remittance rates was, however, too crude and should, in the usual fashion, lead to an interpellation by a member of the powerless People's Political Council (suggested initials PPPC) whereupon an inquiry will be made and the matter then buried.

The Gold Market

Current gold quotations must be regarded as rock-bottom prices; both

here and in China the gold cross rate is now at its lowest since 1941. The average price last week of a troy oz of gold was US\$ 41.50 to 42 (one tael about US\$ 52) both in Hong Kong and in Canton. The import price of gold into the Colony, as transacted in autumn and winter 1946, corresponded, according to the fluctuating T.T. New York rate and bank commissions, to about US\$ 43 to 45 per ounce, c.i.f. Hong Kong. Gold importers are lucky if they can sell at cost price; many dealers have lost considerable amounts since last mid-February (when the gold markets in China collapsed and apparently are still beyond rescue).

The Canton equivalent price of gold (about HK\$ 260 per tael) last week was, as in previous weeks, somewhat weaker than the local quotation. There were a few lots of gold exports transacted here mostly through Swatow merchants, who either shipped their precious cargo to their native district or to Bangkok.

The Hong Kong Govt. has recently again reminded the public that gold can only be moved with permission of the Import & Export Dept. However, such reminders, issued by way of routine, never have any deterring effect on the trade. As a matter of fact there have been large-scale gold transports moving through Hong Kong without any case so far known which was discovered by a Govt officer. This fact is conducive to encouraging further gold trade.

Bank Note Markets

There was no activity in the sterling market; prices remaining at the previous level of \$ 14.30 to 14.35 for £ and 10/- notes.

The Indochina piastre was rather firm; the tendency of the market—both here and in Canton—is confident.

The Nica guilder seems to have been deserted by the market altogether; the quotation drops day by day since the previous week and is now not far from the Java guilder which does not circulate in the East Indies any longer. The Java guilder quoted around \$ 20 (per 100 baht).

Silver Transactions

After a comparative lull in silver export business, due to lack of interest by previous heavy buyers for Bombay and by Singapore traders, several sizeable deals were put

through last week. It seems that it is now easier to obtain in Bombay silver import licenced and consequently some shipments to India have been negotiated here.

One contract involved 100,000 taels of silver (delivered mostly in form of Chinese dollars, subsidiary coins, and Chinese-minted ingots). Local silver exporters were able to obtain as high a price as \$3.75 per tael while the market quoted last week between \$3.50 to 3.70 per tael.

Silver dollars have kept arriving here in increasing quantities; part of these imports have been carried into the Colony by uniformed Chinese, apparently members of the Army. It is a regular occurrence in Kowloon that uniformed Chinese sell, during the late afternoon and evening hours, sacks containing silver coins. One silver dollar is quoted here between \$2.30 to 2.50, provided that it equals 0.72 taels of fine silver.

The New York price, per fine ounce, has been weaker last week, closing on May 26, US\$0.70½, against 72 cents previously. The London silver price remained unchanged; spot quoted 44 pence, and forward 43½ d per fine oz.

Shanghai Share Prices in 1947

Chinese Shares:	Jan.	4	April	5	May	20
	(in thousands of CN\$)					
Wing On Textile...	.6		2.6			66
Wing On Co. ....	.17		.7			2.1
Mayar Silk	1.8		10.2			37.1
Commercial Press	7.7		345			1720
China Match Co.	1.2		4.8			17.2

British Shares:

Ewo Cotton	7	30.4	75
Dockyards	8	31	125
Shal Lands	3.5	12	30
Wheelock	21	77	225
Ewo Brewery	1.8	10	24
Asia Navigation	1.4	7.3	17
Paper Industries	1.5	7.9	22
Metal Industries...	2.1	8.4	27

Kincheng Banking Corp.

The local branch office of one of the leading commercial banks in Shanghai, the Kincheng Banking Corporation, has resumed operations in the Colony. The manager and sub-manager of the Hongkong branch are respectively Messrs C. Y. Chow and C. Y. Bong.

HONG KONG STOCK & SHARE MARKET

The past week was one of the quietest for some months; the turnover being very small indeed. Shares prices in some instances fell away from lack of interest more than anything else.

H.K. Banks declined from \$2075 to 1850 but recovered to 1950. The London Register shares were quoted at £111½, but no shares were available under £115. The Colonial Register shares were quoted £122 in London with few shares with any on offer.

Insurance shares were also a little easier but any fair demand would find scrip hard to obtain.

Public Utilities declined on profit taking and liquidation. Electrics fell from \$59 to 52 but recovered to 57½ in a short afternoon trading session. China Lights also dipped to \$14.75 with a thousand odd shares changing hands at 14.75 and latterly rose to \$16.

Business in other sections of the market was also affected by lack of temporary interest. Dairy Farms fell to \$61½ but quickly responded to 64. It is now several weeks since the dividend and bonus of \$4 was declared and it is high time for the Report and Balance Sheet to be published.

The dividend and bonus for Watson shares was not up to market expectations and shares have eased from their top of 51 to 42½ ex div. and bonus. The earnings of Watson Company fully warrant a bigger distribution. We have only just received the Report and Accounts for the past financial year and shall make a further criticism of it in due course.

The Government Gazette publishes a list of Companies the shares of which can be transferred without obtaining the approval of the Registrar of Companies. There is still a number of important Companies which find themselves unable to give the necessary "all clear." We hope the delay will not be too long.

Removal of Restrictions

Restrictions on trading in 20 shares under the Moratorium have been removed. Transactions are permitted without registration in the following shares, except where an objection to transfer is raised, when approval by the Registrar of Companies is necessary:—

Bank of East Asia Ltd.
Canton Insurance Office, Ltd.
China Emporium, Ltd.
China Entertainment & Land Investment Co., Ltd.
China Light and Power Co., Ltd.

China Provident, Loan & Mortgage Co., Ltd.
Chinese Estates, Ltd.
Hong Kong Electric Co., Ltd.
Hongkong Engineering & Construction Co., Ltd.
Hongkong Fire Insurance Co., Ltd.
Hongkong Realty & Trust Co., Ltd.
Hongkong Rope Manufacturing Co., Ltd.
Hongkong & Shanghai Hotels, Ltd.
Hongkong Tramways, Ltd.
Hongkong & Whampoa Dock Co., Ltd.
Indo-China Steam Navigation Co., Ltd.
Kwong Sang Hong, Ltd.
Lane, Crawford, Ltd.
Sandakan Light & Power Co. (1922) Ltd.
Union Waterboat Co., Ltd.

For several months the Hongkong Stock Exchange has been making representations to Government with a view to the lifting of restrictions under the moratorium regarding the transfer of shares.

With the exception of the above-mentioned 20 shares permission for any transfer of shares has to be obtained from the Registrar of Companies. This often entails delay, and the time lag becomes a greater hindrance when the market is active.

This procedure was considered necessary when, owing to the war, many companies' share registers were incomplete. However, the majority of the more prominent Hongkong companies have completed their registers.

As a result of the Stock Exchange's negotiations with the Government, it is expected that the Stamp Ordinance will shortly be amended in order to facilitate and legalise the transfer of shares.

Trading at the Stock Exchange.

As from last week the schedule of trading at the Hongkong Stock Exchange is as follows: Monday, Tuesday, Thursday and Friday two sessions daily (10 a.m. to 12 noon, and 2.30 to 3.30 p.m.). On Wednesday there is only a morning session. The Exchange is closed on Saturday.

Hongkong Govt Loans

The 3½ per cent Dollar Loan of 1934 (issues of 1934 and 1940) is repayable by 25 annual drawings at par but owing to the war years the drawings for 1942-1947 could not yet been held. On June 20, the outstanding 5 drawings and the 1947 drawing will be held in the office of the Accountant General of Hongkong Govt..

A detailed review of H.K. Govt. Loans appeared in our issue of April 30, page 204.

The redemption will take place on or after July 15, at the Hongkong & Shanghai Banking Corp.

HONG KONG STOCK EXCHANGE

Quotations on May 24:

H.K. GOVT. LOANS: 4 percent \$107½; 3½ percent \$103½.

BANKS: H.K. Bank \$1.940; London Reg. £112½; Chartered Bank £12%; Mercantile Bank £21¼; Bank of East Asia \$117.

INSURANCES: Canton \$420; Union \$815; China Underwriter \$1.80; H.K. Fire \$310.

SHIPPING: Douglas \$270; H.K. & Macao Steamboat \$12; Indo China Pref. \$105; Deferred \$365; Shell (Bearer) s 103/9 d.; Union Waterboat 51 c. rights, \$28 ex rights, \$18 for rights.

DOCKS, GODOWNS: H.K. & Kowloon Wharves \$220; H.K. Docks \$31½; China Providents \$23¼; Shanghai Dockyards \$17½.

MINING: Raub \$7; H.K. Mines 7 cents.

LANDS, HOTELS: H. & S. Hotels \$24½; H.K. Lands \$80 ex rights, \$28 rights; Shanghai Lands \$5; Humphrey Estate \$23; H.K. Realities \$17 ex \$24½; Peak Trams, old \$11½; new, dividend; Chinese Estates \$190.

PUBLIC UTILITIES: Tramways \$24½; Peak Trams, old \$11½, new, \$4½; Star Ferries \$118½; Yaumati Ferries \$34; China Light, old \$15.75, new \$10.50; Electrics \$57; Macao Electrics \$24.75; Sandakan Lights \$14.75; Telephones, old \$50, new \$34½.

INDUSTRIALS: Canton Ice \$7.25; Cements \$21.75; H.K. Ropes \$13½.

STORES: Dairy Farms \$61½; Watsons \$42½ ex dividend; Lane Crawford \$42; Sinceres \$9.15; China Emporium \$8; Sun Co. \$6.75; Kwong Sang Hong \$235; Wing On, H.K., \$135; Powell \$6.

MISCELLANEOUS: China Entertainment \$30½; H.K. Constructions, old \$8¼, new \$6½; Vibro Piling \$6½; Marsman Investments s 13/3 d., Marsman H.K. s 1/6 d.

COTTONS: Ewo \$10½; Wing On Textile —.

HONGKONG COMPANIES' REPORTS

The "Star" Ferry Co., Ltd.

The 45th annual meeting of shareholders for the business year Feb. 1-Dec. 31, 1946, held on April 28, was presented with the Directors' Report revealing the highest profit in the history of the Company (cf. our issue of April 2, p. 173). The balance from working account amounts to \$613,923, and the net profit to \$741,061. This amount plus the amount carried forward from 1945, \$48,121, making a total of \$789,123 was appropriated as follows \$320,000 for \$4 dividend, \$450,000 transferred to General Reserve, and \$19,183 carried forward to 1947.

The authorised share capital of the Company totals \$1 million (100,000 shares of \$10 each), the paid up capital amounts to \$800,000 (80,000 shares of \$10). The current market price is around \$120; the \$4 dividend amounts to a 3 percent return.

General Reserves amount to \$1 million. Provisions for rehabilitation & replacements \$1,563,240. The Company's fixed assets (launches and piers) total \$65,100, and the current assets (mostly shares in public companies and cash) \$1,605,766, while the War Damages Account amounts to 3,084,221. It is as yet unclear to what extent war damage claims will be met.

The Company operates at present 4 launches and rehabilitates a fifth one. The two piers have been overhauled. The purchase or construction of new ferry boats is being considered but this, as well as further expansion of the Company's operations, depends on the future of the Pier leases. The lease will expire in 1949 and no information regarding the future of the Ferry Company is available; the possibility that Government may operate the ferry service cannot be excluded.

Passenger traffic in 1946 has been enormous, and great congestion during rush hours was the rule. Traffic handled last year was far in excess of the pre-war maximum which is another indication—in the absence of any official figures regarding the great increase in the local population—that the influx of Chinese from the interior has considerably boosted the total of residents above the pre-war level.

From a business point of view, the Company can be satisfied with the ever increasing number of customers. Although inconvenience is experienced by the public conditions cannot be materially altered since the question of renewal of pier leases would have first to be determined. During the first few months of 1947 passenger traffic appears to have been increased further which justifies

fied the high share market price of about \$120 since a high dividend for 1947 can be expected, probably between \$5 and 6 (as in pre-war years).

Directors of the Company: Hon. Mr. D. F. Landale (Chairman), Messrs H. D. Benham, L. Kadoorie, N. O. C. Marsh and T. B. Wilson.

Business of the "Star" Ferry

It is estimated that daily over 50,000 passengers use the launches of the "Star" Ferry Co., most of whom travel on the first class deck for which the single fare amounts to 20 cents; third class fare is 10 cents.

A total 11,000 season tickets are estimated to have been issued last month. The monthly fee is \$6. The company's gross earnings should amount to between \$250,000 to 280,000 per month.

Green Island Cement Co., Ltd.

At the 54th ordinary yearly meeting on May 7, it was resolved to suspend payment of dividends until the overdraft of the Company, approx. \$1.4 million, will have been paid off or substantially reduced. The share capital of the Company, at an extraordinary meeting on the same day, was raised from \$1,954,990 (195,499 shares of \$10 paid up) to \$5 million by the creation of 304,506 new shares of \$10 each, to be issued at a later time at the discretion of the Directors of the Company.

The balance of the Company's working account, indicating a small volume of sales of cement, amounted to \$162,920. The net profit for 1946 was only \$3,971.

The position of the Company during the first four months of 1947 improved on account of larger sales of the stocks of cement so that the factory could resume operations once again. Another contributing reason for the improvement was the sale of part of the plant which the Company previously ordered which resulted in a good profit. Furthermore the Cement Co. disposed of a piece of vacant land at a very good price.

The change in the Company's affairs brought about by these factors out-dates the Accounts for 1946. The Company has prewar liabilities to meet of \$360,000 and a commitment of \$1,000,000 for new plant. On the other side there are stocks of cement which, when sold, should realise about \$1,200,000 and proceeds from the sale of land, just referred to, of \$800,000. There are other assets in

stocks of raw materials valued at about \$1½ million, but this represents the minimum stock, it is necessary to carry to ensure continuous manufacture. When all these transactions are completed, there, the overdraft would be approximately \$800,000 and this could only be reduced by profits earned. It is unsatisfactory that an industrial concern of this magnitude should be short of working capital. The present method of operating on borrowed money is expensive and an unfair reflection on manufacturing costs and finally on results. As already stated, the Company's position during 1947 should be considerably improved by the proceeds of the sale of land and machinery, as well as from the profits anticipated from normal business in sales of cement, but until the financial position is fully remedied it would be imprudent and perhaps not even possible to pay dividends.

A. S. Watson & Co., Ltd.

The 58th ordinary annual meeting, to be held on June 6, will be presented with following report by the General Managers & Directors:

The amount at credit of Profit & Loss Account for the period September 1, 1945, to October 31, 1946, amounted to \$1,334,239 to which has to be added the balance brought forward from last year of \$317,208 making the sum of \$1,651,447 available for appropriation.

This sum will be appropriated as follows:—To pay a dividend of \$1.50 per share \$225,000; to pay a Bonus of \$1 per share \$150,000; to transfer to Provision for War Losses \$850,000; To Transfer to Provision for Taxation & Contingencies \$250,000; to transfer to Chinese Staff Superannuation Account \$75,000; to carry forward to next account \$101,447 Total \$1,651,447.

The current market price is about \$42.50, ex dividend. The nominal share value is \$10. The return on investment (\$2.50) about 6 percent.

China Provident Loan & Mortgage Co., Ltd.

The 46th annual shareholders meeting will be held on May 31, when a dividend of 75 cents and bonus of 25 cents will be declared (cf. our issue of April 30, p. 209). The nominal share value is \$5, the current average market price \$22½, ex dividend. The return on investment amounts to about 4½ percent.

At the extraordinary meeting, to be held on the same day, an increase of capital will be resolved. The present authorised capital amounts to \$4 million (800,000 shares of \$5 each), the paid up capital is \$2,210,920 (442,184 shares of \$5 fully paid up). The capital will be increased to \$10 million by the creation of 1.2 million new shares of \$5 each, to be issued later at the discretion of the Company's Board of Directors.

Indo-China Steam Navigation Co., Ltd.

The 62nd annual meeting, to be held on June 27, will decide on the following appropriations for the year ended Dec. 31, 1946:

To transfer to general reserve	£ 60,000
To transfer to ships replacement reserve	30,000
To transfer to underwriting account	22,674
To pay a dividend of 6% for the year 1946 on 49,589 cumulative preferred ordinary shares	14,877
To pay dividend of 10% on 49,589 deferred ordinary shares	24,794
To pay a bonus of 10% on 49,589 deferred ordinary shares	24,794
To carry forward unappropriated	24,391
	£202,030

The net profit for the year ended December 31, 1946, amounted to £183,077 and after adding the sum carried forward as at Jan. 1, 1946, there remains the above balance available for appropriation.

The current average market price for the Company Preferred shares is \$105, and for the Deferred shares \$365.

Hong Kong & Canton Ice Manufacturing Co., Ltd.

At the 20th ordinary yearly meeting of shareholders, held on April 15, it was resolved to sell the property of the Company (ice-making and cold storage plant in Shameen, Canton) and liquidate. The losses of the Company for the post-war period of Oct. 1, 1945 to July 31, 1946 amounted to \$283. From pre-war business losses of \$38,635 were carried forward in 1946.

The share capital, authorised and issued, amounts to \$200,000 (40,000 shares of \$5 each fully paid up). The General Reserve amounts to \$30,000. Current Liabilities of \$13,669, against Current Assets of \$58,330. The fixed assets of the Company (practically only land and buildings in Shameen, Canton) are valued, as per Balance Sheet at July 31, 1946, at \$67,600.

The current market price on the H.K. Stock Exchange is about \$7.25. It appears that shareholders anticipate, upon the sale of the Company's property and winding up, the realisation of an amount of about \$280,000; however, the machinery, by reason of age and neglect during the war years, is of little value. What amount, in C.N.S., can be obtained in Canton from the eventual sale of the property remains to be seen.

Directors of the Company are: Messrs E. R. Hill (Chairman), R. Gordon, F. P. Vasunia and Ho Kom-tong.

The Canton Insurance Office, Ltd.

The 62nd ordinary meeting of shareholders of the Company was held on May 9, and an extraordinary meeting will take place on May 30, when an increase in the paid up and authorised capitals will be resolved as follows: Authorised capital: from \$2.5 million (50,000 shares at \$50 each) to \$10 million, by creating 150,000 new shares of \$50. Issued capital from \$1 million (50,000 shares of \$20 paid up) to \$2½ million, by capitalising the uncalled \$30 per share, transferring the amount of \$2½ million from the Reserve Fund to Issued Capital. The Reserve Fund totals \$5,647,059.

The ordinary meeting was presented with the Accounts for 1945 and 1946. In 1945 the Company's credit balance amounted to \$2,207,168, a decrease of \$218,406 against 1944. Premium income in 1945: \$4,353,475 against 1944: \$5,038,850. In 1945 an amount of \$1,573,056 for claims and losses was paid.

A total dividend of \$12 per share (i.e. \$5 interim, and \$7 final), consuming \$600,000, was paid to shareholders for 1945. The current market quotation is around \$440/470: the dividend amounts therefore to about 2½ percent (i.e. 60 percent of the previous nominal or 24 percent of the new nominal value).

In 1946 the Company's credit balance amounted to \$2,822,441, an increase of \$146,952 over 1945. Premium income also increased to \$4,411,630. In 1946 a total of \$1,015,967 for claims and losses were paid, a decrease of over half million against 1945.

Out of the credit balance for 1946 an interim dividend of \$5 has been paid, consuming \$250,000. A final dividend will be paid later; the 1946 balance of \$2,572,441 has been carried forward.

Total assets of the Company amount to \$23,145,521 the largest single item being British Indian and Colonial Govt securities totalling \$14 million.

The Chairman (Hon. Mr D. F. Landale, representing Jardine, Matheson & Co. Ltd.) referred in his speech at the annual meeting to the heavy incidence of losses due to theft and pilferage particularly at Far Eastern ports during 1945. In 1946 the position had somewhat improved but claims due to this cause are substantial. Enhanced rates received by the Company under combined marine surcharge have somewhat offset these claims. Steamship companies have not shown much co-operation with the Insurance Company; under the plea of abnormal conditions various "chop" have been introduced into bills of lading with a view to evading what would normally be the carrier's liability under the "Carriage of Goods by Sea Act." In many cases claims which are patently the responsibility of shipping companies are turned down and it is only after much time and trouble have been expended that recovery is made.

The Consulting Committee of the Company consists, apart from the Chairman, of the following: Messrs F. C. Barry (H.K. & Shanghai Hotel Co. Ltd.), C. Bernard Brown (Peat, Marwick, Mitchell & Co.), P. S. Cassidy (J. D. Hutchison & Co. Ltd.), E. E. Clark (J. D. Humphreys & Son), M. K. Lo (Lo & Lo), W. A. Stewart (Davie, Boag & Co. Ltd.), S. T. Williamson (Douglas Laik & Co.).

Union Insurance Society Of Canton, Ltd.

The annual meeting of the Society was held on May 20 in Sydney, the temporary head office. In 1941 the head and registered offices were transferred from here to Australia but the re-transfer to Hongkong will shortly take place. The Society maintains active offices, besides in the Colony, in Singapore and Manila, the re-opened offices in China are operating only under great difficulty owing to, as the Chairman so aptly described it in his speech, "the generally chaotic conditions which prevail, and which will continue until some form of economic stability has been established."

The capital of the Society amounts to £2 million (200,000 shares of £10) authorised: £1,350,000 (135,000 shares of £10) issued, of which £810,000 have been paid up. Total assets as at Dec. 31, 1946 amounted to almost £8 million.

The Report, Accounts and Balance Sheet of the Society for the year 1946, include the transactions of its Affiliated Companies, the British Traders' Insurance Co., The China Fire Insurance Co., Ltd., the North China Insurance Co. Ltd., and The Yangtze Insurance Association Ltd.

MARINE. The net premiums for the year amounted to £1,448,688. After providing £100,000 for Taxation and transferring £200,000 to Profit and Loss Account, the Marine Fund stands at £1,730,186.

FIRE. The net premiums for the year amounted £1,223,761. £69,478 has been transferred to Profit and Loss Account. The Fire Fund stands at £607,504.

ACCIDENT AND GENERAL. The net premiums for the year amounted to £354,885. £15,456 has been transferred to Profit and Loss Account. The Accident and General Fund stands at £198,454.

DIVIDENDS. £1 7 6 per Share out of the Society's income for the year ended 31st December, 1946, payable on the 20th May, 1947, as under:—

3 - Sterling per Share wholly and exclusively out of such income derived from sources in Australia.

24 6 Sterling per Share wholly and exclusively out of such income derived from sources outside Australia.

The dividend in 1945 amounted to £1 5 0 (2 - plus 23/-).

PROFIT AND LOSS ACCOUNT. The amount at credit of the Profit and Loss Account at the beginning of the year was £257,850, to which have been added Interest and Dividends £169,642 (which includes £15,148 in respect of previous years) and transfers from Underwriting Accounts £284,934. After providing for the Dividends, and charging Taxation and other outgoings, there remains a balance of £301,939 to be carried forward.

RE-OCCUPIED TERRITORIES RECONSTRUCTION ACCOUNT. This Account shows a debit balance of £6,434, which is carried forward.

ASSETS AND LIABILITIES IN RE-OCCUPIED TERRITORIES. In cases where it has been possible to establish values Assets recovered have been taken into account in the Balance Sheet as at 31st December, 1946. Outstanding Liabilities in enemy territories are fully covered by Reserves already set up to meet them.

RESERVES. Following the re-valuation of the above-mentioned Assets, transfers have been made from Exchange and Investment Fluctuation Account of £190,000 to General Reserve and of £300,000 to Reinsurance Fund.

HOUSE PROPERTY-LEASEHOLD. The Union Building, Hongkong, which no longer satisfactorily served the Society's requirements, has been sold. The question of acquiring other property and erecting a modern building in Hongkong will be considered later.

The current market price, ex dividend, is about HK\$800.

Directors of the Society: Sir F. H. Tout (the Chairman), Messrs G. L. C. Dewez, H. N. Pope, D. F. Middleton, J. T. Vinton Smith; the general manager is Mr A. W. Hughes.

Hong Kong Fire Insurance Co., Ltd.

At the extraordinary general meeting of shareholders of the Company on May 30, it will be resolved to increase the paid up and the authorised capital as follows: Authorised capital: from 40,000 shares of \$50 each, \$2 million, to 200,000 shares of \$50 each, making a total of \$10 million, by creating 160,000 new shares of nominal value of \$50.

Paid up capital: from 40,000 shares of \$20 each, \$800,000, to 40,000 shares of \$50 each, making a total paid up capital of \$2 million, by calling up the unpaid \$30 per share of the authorised capital. The call up amount of \$12 million will be transferred from Reserve Fund to Capital of the Company. The shareholders of the Company will obtain pro rata increases.

The Report of the Company's General Managers was published in our April 2 issue, page 173, and the speech of the Chairman appeared in our April 30 issue, page 205.

The current market quotations is \$325, the highest price so far recorded. In 1936 the shares reached the highest prewar quotation of \$305

of \$153,453, left for appropriation, has been distributed as follows:—

To transfer to Staff Leave & Superannuation Fund ...	12,408
To transfer to Contingency Reserve	40,000
To pay a dividend of \$2.50 per share on 38,813 share	97,032
To carry forward to 1947 ..	4,013
	\$153,453

The Company operates a fleet of 5 motor driven steel waterboats and one motor launch, valued as per Balance Sheet, at \$222,000 which are the Company's fixed assets as on Dec. 31, 1946. The actual value today would be around \$1½ million.

The Company's share capital totals \$500,010 authorised (71,430 shares of \$7) and \$271,691 (38,813 shares at \$7 paid up) issued. Last January 30, the Company announced, as the first local public company after the end of war, the issue of new capital. The unissued shares have been offered to the shareholders at the rate of 4 new shares for each 5 old shares at the nominal value of \$7. The new fully paid up capital will therefore amount to \$500,010 as from July 1, 1947.

The current market price per share is about \$28; the investment return \$2.50 dividend amounts there to 9 percent (or 36 percent on nominal value); however, with the issue of new shares at nominal value shareholders have actually doubled their capital (last January the average market price was \$26). The current market price for Waterboat shares cum rights is \$50.

Current assets of the Company as on Dec. 31 1946 totalled \$285,423, and current liabilities \$287,043.

The waterboats and the launch have been overhauled and are in first class condition. The Company has suffered the loss of two waterboats which were chartered by the Royal Navy in 1941; their value has been written off but the Company nevertheless hopes for a settlement of their claim in London. No estimate of an amount recoverable for the loss of these two boats is available.

A new waterboat has been ordered by the Company which is now under construction by the H.K. & Whampoa Dock Co. and is expected to be in service in August. The cost of the vessel will amount to about \$380,000. With the operation of the sixth waterboat and the installation of improved water pumping facilities, which have been completed, there will be ample tonnage to meet all requirements.

The General Managers of the Company are Dodwell & Co. Ltd. The Consulting Committee consists of: Messrs E. R. Hill (Chairman), I. W. Shewan, N. O. C. Marsh, A. C. Offenbergh and T. B. Wilson.

Union Waterboat Co., Ltd.

The 38th ordinary yearly meeting of shareholders was held on May 21, when the accounts for 13 months, i.e. Dec. 1, 1945 to Dec. 31, 1946 were presented.

The balance at credit of Profit and Loss Account after allowing for Depreciation, is \$236,588. After deducting the debit of \$83,134 brought forward from last account, the amount

COMMERCIAL MARKETS

Chinese Export Embargo

Although it is the avowed policy of the Chinese Govt to promote exports—provided that foreign exchange receipts are collected by the Central Bank of China—it has been found necessary to prohibit certain exports from China owing to shortages in the food supply of the country. The following oils and seeds have been restricted from exportation: soya beans and oil; ground-nuts and oil; sesamum seeds and oil; rape seeds and oil. A quarterly export quota has been established for these seeds and oils but it has not yet been announced.

The Ministry of Economic Affairs, Nanking, in cooperation with the Board for the Development of Exports are trying to "adjust demand and supply and stabilise prices" for the above mentioned produce. Other export produce may, in due time, be included under this export quota system which can be worked as well for the additional control of Chinese exports so as to centralise the proceeds from export bills in the hands of Govt.

In our issue of Feb. 26, page 111, the establishment of the Board for the Promotion of Exports was reviewed, and apprehensions of merchants regarding the operation of this Board were described.

Chinese Exports of Minerals

The Chinese Govt, through its National Resources Commission, is in full control of domestic consumption and purchase of wolfram (tungsten) ore and antimony. However, much smuggling of these two minerals continues so that the Central and Provincial Govts, esp. in the southern part of China, keep on reminding the public that export of wolfram ore and antimony is prohibited, threatening the usual consequences if offenders are apprehended. It appears that influential circles in south China are interested in the export of wolfram ore and antimony and resent the monopoly of the National Resources Commission.

The minerals monopoly has never paid adequate prices to miners and merchants with the consequence that the output has considerably decreased. The system of compulsory purchase at Govt-fixed prices has so far not produced satisfactory results both for Govt and the mining interests.

The world price for tungsten ore (of 70% WO₃) is US\$ 15 to 16 per short ton unit, c.i.f. US, plus \$8 US import duty, making a total of \$23-24. Britain, the USSR and France are the main competitors of the U.S. Total US consumption for 1947 of wolfram ore is estimated about 7,000 tons, of which about half is supplied by domestic sources in America. Prices remain

firm owing to a tendency of greater industrial requirements and less regular supply.

Cocoa nut Oil

The local market obtains cocoanut oil supplies mainly from Siam; the principal source was previously Singapore but that British Colony ceased to grant freely export licences to many parts of the sterling area. Cocoanut oil exports from Singapore are mainly utilised to earn hard currencies. Some of this Malayan oil is, however, regularly smuggled into Siam from where re-exports are effected.

Hongkong obtained recently an allocation of cocoanut oil from Singapore amounting to 500 tons per month. Local importers have to secure an import licence by applying in the first place to the Dept. of Supplies, Trade & Industry; the Singapore exporter has, simultaneously, to apply for an export licence covering the Hongkong-permitted individual import.

Singapore oil was recently quoted as high as \$137, and Siamese oil \$135 per picul. The current market price is \$133-134.

The Rubber Market Slump

As a consequence of overproduction of natural rubber and large stockpiles in all industrial centres market prices for crude rubber are bound to decline further. Motor car tyre manufacturers have reduced both the prices of their products and curtailed output. The competition of synthetic rubber will increase.

US rubber stocks are about 100% higher than in prewar years. The 1947 natural rubber production is estimated at 1.2 to 1.5 million tons against about 2½ million tons in prewar years. Synthetic rubber output in 1947 will exceed 2 million tons; about 25% of which are estimated as America's production.

The weak rubber prices and the unpromising outlook will affect the economic life of particularly British Malaya and to a smaller extent the other rubber producing countries in

the Far East: Indochina, Siam and the East Indies. Political repercussions must also be anticipated.

The price in London for No. 1 ribbed smoked sheet, Oct.-Dec. delivery, was last week around 9½ d. per pound, against 1/1% d. middle of April.

Rubber futures in New York recorded last week 1 cent west prices but slightly improved later to US\$ 0.1628 per pound for September delivery, 16.13 cents for October, 16 cents for November, 15.88 for December. The market in New York is highly speculative but the weak tendency continues.

Produce Prices in Hongkong

Tung oil buyers were holding off, expecting lower prices; \$136 per picul (a drop of \$10 against the previous week) still did not find any interest. The New York price (as quoted below) is US\$ 0.25 per pound, f.o.b. New York but actual business was done at least ½ cent lower.

The American market is not much interested in China wood oil; since no regular deliveries from China can be made and the quality of many recent shipments has been found poor, industrial consumers in U.S. prefer to do without it. The consumption of Chinese tung oil has in consequence of these two factors (irregular deliveries and poor quality) decreased in 1947 as compared with prewar; the highly political nature of Chinese tung oil exports has further complicated the position. Nominally control of wood oil is in the hands of the semi-governmental China Vegetable Oil Corp. This firm has been unable to sell in a slumping market its large stocks, piled up both in New York and the U.S. West Coast ports, said to be some 22,600 tons. Since prices show more weakness, and the Chinese firm does not want to take a loss, the stocks cannot be reduced for the time being. But their presence has a weakening effect on the market in U.S.

Other China seed oils were also weak: Cassia oil dropped, against the previous week, \$100, closing last week \$1,200; Linseed and teaseed oils were quoted respectively at \$280 and 180 per picul.

China Produce Prices in New York

Closing prices on May 26; in US\$:

CASSIA OIL, per lb. F.O.B. New York	3.25/3.85
ANISEED OIL, per lb. F.O.B. New York	0.80/1.00
ANTIMONY, American, 99½ percent grade in bulk of carload lots, F.O.B. Texas	0.33
BRISTLES, F.O.B. New York, per lb, as follows:	
Hankow, Regular Assortments	3.60 nom.
Chungking, Regular Assortments	2.40 nom.
Shanghai, Regular Assortments	1.85 nom.
Tientsin, short 55's	4.60 nom.
Tientsin, regular 55's	7.00-7.20 nom.
SANDALWOOD OIL, in drums (depending on sellers quantity & quality)	16.00
TUNG OIL, in tank cars, per lb. F.O.B. New York	0.25

THE INDUSTRIAL POTENTIAL OF JAPAN

A Survey Made

By James A. Rabbitt

(PART TWO)

(Concluded From Page 215, May 7).

V. JAPAN'S INDUSTRIAL POTENTIAL.	A. POWER	F. FOOD
VI. MINING AND METALLURGY	B. TRANSPORTATION	G. TEXTILES
VII. OTHER BASIC INDUSTRIES	C. MACHINERY	VIII. CONTROL OF SCIENTIFIC RESEARCH
	D. CHEMICALS	
	E. AGRICULTURE	

V. JAPAN'S INDUSTRIAL POTENTIAL.

Steel

Japanese saleable products are:

- Intelligent management.
- A keen sense of trading values.
- Obedient and intelligent labor.
- To supplement modern plants, a high potential of cottage industry amply provided with cheap electrical power for making parts of exportable metal products, toys, buttons, brushes, flashlights, fountain pens, etc.
- Custom of expandable bonuses to meet sudden changes in production or cost of living, thus maintaining a more uniform wage-scale than where all economic changes must be met by a change in wages.
- Close co-operation of the Department of Commerce & Industry and the Finance Ministry with industry for sales promotion abroad for those products which bring the greatest returns to the nation in foreign exchange.
- Great resilience in meeting and solving economic problems affecting the country's industries.
- Large-scale development of hydro-electric power potential.

	Admitted capacity	Ratio of prewar consumption to capacity	Ratio to capacity of Non-Soviet Asia
Steel rolling mills	7,700	20%	81%
Furnace steel ingots	8,819	19%	75%
Electric steel ingot	2,964	—	—
Blast furnace pig iron	5,613	29%	44%
Coke (oven)	5,600	23%	27%
Iron Ore (iron content)	850	18%	10%

(Quantities of capacity are in thousands of metric tons per year).

Non-Ferrous Metal Refining

	Admitted capacity	Ratio of prewar consumption to capacity	Ratio to capacity of Non-Soviet Asia
Aluminum	100,000	9%	63%
Magnesium	6,950	negligible	25%
Copper	80,000	91%	n.a.
Zinc	178,000	30%	79%
Lead	91,180	66%	72%
Tin	6,000	66%	n.a.

(n.a. indicates not available)

Mechanical Industries

	Admitted capacity	Ratio of prewar consumption to capacity	Ratio to capacity of Non-Soviet Asia
Machine tool building	50,400 units	not available	—
Other machinery building	1,111,933 m.t.	but probably not over 20%	85%
Locomotive building	1,000 units	of present capacity	65%
Freight car building	17,000 units	—	47%
Passenger car building	2,156 units	—	48%
Motor car and truck building	30,650 units	—	100%

(Quantities shown are on an annual basis)

PAULEY MISSION

The productive capacity remaining in Japan Proper after the war is far beyond Japan's capacity to consume and constitutes a large percentage of Asia's productive capacity. Her major losses are the assets in the territories she took over in her half century of conquest. Left to her own resources within her four home islands, and given access to certain raw materials, she could recoup her domestic losses rapidly, for she still has, in addition to the most powerful concentration of productive capacity, the largest aggregation of technically trained personnel in non-Soviet Asia, an industrial organization disciplined and experienced in taking concerted planned action.

The Pauley Mission compiled the following tables relating to several industries of Japan Proper, wherein admitted capacity, ratio of pre-war consumption to capacity and ratio to capacity of non-Soviet Asia are shown:

Chemicals (Basic)

	Admitted capacity	Ratio of prewar consumption to capacity	Ratio to capacity of Non-Soviet Asia
Nitrogen fixation	108,000*	50%	38%
Sulphuric Acid (62%)	4,900,000	23%	75%
Soda Ash	835,000	13%	n.a.
Caustic Soda	653,488	12%	n.a.
Chlorine	225,440	12%	90%

*Metric tons of nitrogen content per year in various forms, such as ammonium sulfate, calcium cyanamide, etc.

(Other capacities shown in metric tons per year).

Energy

	Admitted capacity*	Ratio of prewar consumption to capacity	Ratio to capacity of Non-Soviet Asia
Electric Power, KW	10,779,438	50% **	56%
Coal, metric tons per year	20,500,000	163%	17%
Petroleum (natural crude), bbl. per year	1,638,000	n.a.	3%
Petroleum refining bbl. per year *	35,000,000	30%	11%

* Before bomb damage (estimated).

** Based on 1931 capacity.

In a report issued by Japan's Ministry of Commerce and Industry, in September 1946, it was stated that after the removal of 505 industrial plants as reparations Japan's industrial capacity will be reduced 50%. The following table is the result of a survey conducted by the Ministry of Commerce and Industry:

Industry	Present	Removal	Retained
Machine Tool Factories	304	90	214
Machines	32,163	15,279	16,884
Capacity (units)	51,000	24,800	28,400
Coal Power Electricity (Kilos)	2,872,630	1,373,200	1,499,430
Ball Bearing Factories	35	32	3
Out in Y1,000,000	Y234	Y228	Y27
Caustic Soda Capacity (tons)	257,688	182,300	75,388
Sulphuric Acid Capacity (tons)			
Catalytic Method	1,911,140	693,252	1,217,888
Lead Chamber Method	3,901,921	693,252	3,208,668
Iron and Steel Capacity in 1,000 tons			
Pig Iron	5,390	2,900	2,490
Steel Ingots	6,640	2,810	3,830

These figures of plant capacity to be retained are considerably higher than previous estimates and recommendation by the National Engineers' Committee of The Engineers' Joint Council, which, at the request of the Secretaries of State, War and Navy, submitted in April 1946, a Report on the Industrial Disarmament of Japan, abstracts from which are given later in this survey.

The Allied plan for the industrial disarmament of Japan has not, to our knowledge, been published. The plant capacities as listed by the Japanese Ministry of Commerce and Industry do not indicate production allowable for the present. It is the writer's understanding from several interviews with members of the State Department in Washington that the extent of production will be controlled for a long time to come and held within Japan's ability to earn the foreign exchange required to move the wheels of industry in that country.

The National Engineers' Committee Report suggests:

"In certain particulars where imports must be permitted for the establishment of a balanced domestic economy they may be effectively supplemented by a system of import licenses."

The N.E.C. also acknowledges Japan's shortage of ores and minerals and states: "in the main the metallurgical industries of Japan have been built up on a basis of imported raw materials which have been processed to finished products by use of steam or hydro-electric power, plus labor and skill."

In the following paragraphs we have reviewed briefly the principal minerals and basic industries which indicate Japan's industrial potential with Allied controls.

VI. MINING AND METALLURGY

Japan's remarkable industrial expansion from 1932 onward was paralleled by a corresponding increase in domestic mineral production and consumption. By 1936 the value of mineral production was about two and a half times the 1932 production on a rapidly increasing scale.

The output of coal and water-power also increased greatly during the same period. In 1931 the value of coal represented 63 per cent of the value of all minerals produced.

Domestic oil production in 1936 increased 75% over the 1933 production but still supplied only 9% of the country's annual requirements, 91% being furnished by imports. Oil refining from imported crude and also synthetic oil production was greatly increased between 1932 and 1936 by which year about one-half of Japan's gasoline and kerosene requirements, 94% of its lubricating oil and 12 1/4% of its fuel oil were refined in domestic refineries.

Domestic iron ore production which amounted to only about 10% of the national requirements was, nevertheless, increased from 226,700 m.t. in 1932 to 620,400 m.t. in 1936

Of other minerals, the production of gold and silver in 1936 was double that of 1932. Although the consumption of copper increased by about 135% between 1932 and 1936, the domestic production remained almost static at 70,000 to 78,000 tons. The consumption of lead likewise increased to 104,389 tons in 1936 but only 8 1/2% was produced within the country. Of the zinc consumption of 100,840 tons in 1936, only 38% was produced in Japan. The domestic supply of manganese was about 30% although the quantity consumed had risen from 26,242 tons in 1932 to 67,753 tons in 1936.

Chromite, sulphur and pyrites were practically self-sufficient but of alloying metals such a nickel, mercury, molybdenum, vanadium, tungsten and antimony there were only small quantities produced in Japan.

Coal

Although the most abundant material produced is coal which has made the largest contribution to Japan's export of mineral products, it has been necessary for Japan to balance its export of steam coal, of which it has an abundance, with imports of cooking coal, of which its supply is limited. Although it would be possible for the Japanese to support, a sufficient coke-making industry, using local coal only, for a considerable term of years, they followed a policy of importing rich coking coal from North China and Manchuria and mixing it with their own lower grade coking coal then ex-balance their foreign trade account.

Japan's coal production of nearly 35 million tons in 1932, and consumption of about 30 million tons, may be taken as the last peacetime standard. The increase due to war conditions brought production to 54 million tons by 1944. It is also significant of war conditions that the increase in consumption was not spread generally over all industries but confined principally to the heavy and chemical industries.

The only figures available to the writer at present are for 1933, as follows: (unit—1000 M.T.)

	Bituminous	Anthracite	Total	%
Heavy Industry	6,209	150	6,360	16.0
Chemical Industry	4,138	160	4,298	10.8
Stoking ships	4,500	—	4,500	11.4
Railroads	3,722	20	3,742	9.4
Textile	3,480	50	3,530	8.9
Ceramics	3,442	150	3,592	9.1
Electric Power	2,863	15	2,878	7.3
Gas & Coke	1,978	300	2,278	5.7
Foodstuffs	2,075	15	2,090	5.3
Others	5,042	1,340	6,382	16.1
Totals	37,449	2,200	39,849	100.0

It does not follow that the coal supply for all of the industries listed above should, in the future, be the same as it was in 1933. For example, stoking coal for ships will be reduced in proportion to the difference between Japan's pre-war and post-war tonnage, which by 1937 had been reduced as changes in the coal allotment to each industry must be made on the basis of the present importance of particular industries in manufacturing products that are most essential to Japan's present economic needs, as determined by the policy of Allied control.

The question as to which deposits are to be operated for the greatest economy can be answered only after many conferences with the Japanese engineers in the Mining Society of Japan.

With further reference to the allotments of coal for various peacetime industries, it must be remembered that the increases in coal consumption by the heavy and chemical industries in the post 1933 period were made at the expense of the non-strategic industries which by 1937 had been reduced to operating at 61% of normal for the spinning industries; 52% staple fibre; 28% for artificial silk; 50% for paper and 36% for cement. All of these industries must be brought back to normal or excess production as they are most essential to economic recovery even on the reduced scale covered by Allied policy.

According to the 1932 estimate of the Department of Commerce and Industry, the coal resources for Japan Proper were 16 billion 700 million tons mostly in the Kyushu and Hokkaido fields, made up of:

Anthracite	.....	719 million tons
Lignite	.....	478 " "
Bituminous	.....	" "

15 billion and 499 million tons.

Coke

Japan's prewar by-product coke industry was well organized, there were 22 plants in operation, with 64 Batteries and 2,366 Ovens, producing 9.7 million tons of coal and 6.3 million tons of coke, with additional wartime plants under construction in 1941.

Beehive coking is known to have been practiced at Yawata, Kamaishi, Fushun and Pemsihui as well as in the coking coal regions of China occupied by the Japanese (Kailan, Tiyan, Taveh and Hankow).

As will have been noted from the report of the Pauley Mission, the post-war capacity in Japan Proper was 5,600,000 tons indicating the destruction of only 1,226,000 tons.

There has been some talk of dismantling the Yawata plant for reparations. This would have the peace-policy advantage of eliminating a potential war unit by leaving the balance of coke production well decentralized, but it would not leave sufficient production

capacity to meet the demands of the latest announced figures for allowable steel ingot capacity of 3,830,000 tons.

Petroleum

Japan's oil fields are very limited and notwithstanding a determined intelligent development of all domestic resources they have not been made to yield more than 10 per cent of the country's normal demand. The balance must be supplied by imports.

Pre-war storage facilities were sufficient for 55,000,000 bbls., 20,000,000 bbls. of which were for commercial storage, approximating six months stock in normal times. The N. E. C. Report recommends that storage tanks in excess of 6,000,000 to 7,000,000 bbls. should be dismantled and destroyed.

The N. E. C. has assumed that the normal annual commercial requirements of Japan can be supplied from 22,000,000 bbls. of crude, of which 20,000,000 must be imported. This assumption is based upon the elimination of aviation, abolition of the navy and a reduction in shipping, but observes: "With normal growth of business and with transfer of effort from manufacturing heavy to consumer goods, there is likely to be increased demand for motor fuels, lubricants, diesel and probably fuel oils."

Synthetic Oil

Plants for making liquid fuel in Japan Proper have been estimated at:

8 Plants for low temperature carbonization Annual Capacity	.....	110,400 M.T.
3 Plants for Hydrogenation	.....	14,300 M.T.
5 Plants for Fischer-Tropsch	.....	130,000 M.T.

The N. E. C. Report recommends that only the low temperature carbonization plants be permitted because the primary product would be low-temperature coke which is useful for domestic heating

Iron Ore

Japan's production and consumption of iron and steel has been greater than that of all Far Eastern Countries, yet her total iron deposits of approximately 80 million tons are about equal to the United States Steel production of 1940.

Pig Iron

Japan's pig iron supply prior to 1936 shows the extensive use of scrap iron to attain its steel ingot production. The change over from the use of scrap to sponge is hereafter referred to in our remarks regarding the extensive use of electric furnaces for smelting low-grade ores in Japan.

Steel

A general picture of what Japan's steel production is likely to be in the near future, if the N. E. C. Report is accepted as a guide, is given in the following excerpts from their Report:

"Based upon a study of average requirements for the 1926-1930 period, and with adjustments for current conditions, the apparent need for steel in Japan is set forth, by consuming industries, in the following tabulation:

Industry	Metric Tons
1. Construction	..... 350,000
2. Automotive	..... 50,000
3. Rail Transportation	..... 210,000
4. Containers—cans, barrels drums	..... 180,000
5. Shipbuilding, secondary uses	..... 20,000
6. Mining, Quarry & Lumbering	..... 40,000
7. Machinery, Industrial Equipment, Tools, Agricultural and Electric Equipment Appliances & Utensils	..... 350,000
8. Aircraft, Ordnance, Export	..... none
9. Miscellaneous, not classified above	..... 120,000
10. Allowance for rapid increase in population due in part to repatriation	..... 280,000
Total	..... 1,600,000

"The foregoing figures are in reasonable harmony with a reported average peacetime consumption, for the 1926-1930 period, of 1,539,000 metric tons of rolled steel products, or a total of 1,627,000 metric tons including steel castings, forgings, and others. During the 1930's and beyond, the extraordinary expansion of the Japanese steel industry to a potential productive capacity of approximately 9,000,000 metric tons of finished products, equivalent to 13,000,000 tons of ingots, reflects clearly the development of a facility for war purposes.

Therefore, it is recommended that:

1. To eliminate the war potential of this most basic of Japan's heavy industries and to provide for the justifiable needs of a peacetime economy, there be permitted an annual production of 1,600,000 metric tons of finished rolled steel products, equivalent to 2,300,000 metric tons of ingots. The installed steel-making capacity necessary to support such production is approximately 2,500,000 metric tons. By far the largest part of this should be concentrated in three or four of the most efficient open hearth plants, operating in close proximity to blast furnaces and rolling mills.

2. To support the recommended steel making operations, there be permitted the annual production of 1,500,000 metric tons of blast furnace iron, or approximately 85% of the ingot tonnage. In addition, there should be permitted a production of 500,000 metric tons of foundry iron per year by blast furnaces, for castings. If in practice it be found that the supply of steel scrap is more than sufficient to support the production of 2,300,000 metric tons of ingots, the permissive amount of blast furnace iron may be decreased accordingly.
3. As a part of the total 2,300,000 metric tons of ingots, there be permitted the annual production of 230,000 metric tons of electric furnace steel ingots. This means an installed capacity of approximately 250,000 metric tons. There existed in Japan at the time of surrender about 3,000,000 tons of such capacity; all but 250,000 tons of this capacity should be removed or destroyed.
4. As to the importation of scrap for steel-making purposes, permission should be held in abeyance until the situation is more clearly defined and the needs of the industry can be better determined on the basis of practice. As ample domestic supply may now be available for the recommended rate of production, and it may persist for some years if effectively gathered and handled. It is thought that the islands may "originate" sufficient steel scrap annually to support the making of 2,300,000 metric tons of ingots, or, if not that something of the order of magnitude of 400,000 tons of scrap per year might be accorded consideration, when and as the need is demonstrated.
5. With respect to the principal ferro alloys and alloying metals required for the production of different varieties of steel, optional procedures be permissive. The choice is between importing these products as used by the steel industry, or importing wholly or in part the necessary raw materials and converting them to metallics in Japan. The recommended allowable production of 2,300,000 metric tons of steel ingots per year will require approximately 21,000 tons of 75% ferromanganese, and the equivalent of 6,200 tons of 50% ferrosilicon. For the production of alloy steels, an estimated 3,000-3,600 metric tons of contained chromium may be required, and about 1,000-1,500 metric tons of nickel. A few hundred tons each of molybdenum, vanadium, and tungsten are indicated.
6. On account of normally varying requirements for different kinds of finished steel products from time to time, the permissive sum total of mill capacities for converting ingots to finished products should be substantially in excess of the steel-making capacity.

7. The importation of raw materials, primarily iron ore and coking coal, should be regulated to provide such amounts as may be required to make up any deficiency in domestic production of such raw materials, but with due regard to both the rate of depletion of Japanese mines and the need of neighbouring states for markets for their ores.
8. Exports of steel products to markets formerly dependent on Japanese supply, should be permitted only to the extent that economies of such countries will not be seriously disrupted.

Inasmuch as the final plans for Japan's industrial disarmament must be made and implemented by the Allied Control Board in Japan, there will be many changes from the recommendations made by the National Engineers Committee. This is already indicated by the figures hereinbefore quoted from the Japanese Ministry of Commerce and Industry showing an allowable steel capacity of 2,490,000 tons of pig-iron and 3,890,000 tons of steel ingots.

Recommendations of the N. E. C. for such a drastic cut in the use of electric furnaces is, in the writer's opinion, a severe blow to the limited economic resources of the country. Industrial intelligence and power are the two most outstanding assets possessed by Japan to offset its poverty in the raw materials of industry.

The only prediction that is possible for future conditions is that they will change. Conditions cannot remain static any more than we can keep the population static in Japan unless we use the retrogressive, totalitarian methods that the Tokugawas used between the 17th and mid-19th centuries. The horror of the conditions during that period were politely described by Dr. John Orchard in his "Japan's Economic Position."

Any policy which calls for the destruction of economic productive machinery or which is not flexible enough for change to suit the changing conditions of the future is bound to lose us that which may easily be our most precious asset in this experiment of revamping an enemy nation: the winning of their respect and support in time of war, as we have already won the respect and support of the Philippines.

Under the conditions which prevail in Japan it would be easier to achieve a return to normal for them, and reparations for the Allies, if they concentrate on such metal products as take a maximum of power and industrial intelligence and a minimum of raw materials. As example: electric fans, drills, pneumatic tools, hand tools, gauges and light precision machinery would be more profitable than hydraulic presses, rolling mills, sugar mills, etc., because the small items take a minimum of materials which are scarce and must be imported and pro-

vide an outlet for a maximum of domestic intelligence, skill and power besides bringing a higher price per pound than the heavy items.

With reference to the wide use of electric furnaces in Japan, it must be remembered that the difference between their economy and ours makes it necessary for them to adopt practices for the recovery of metals which would not suit our economy. The excessive use of scrap in the 1930s as compared with this country led to the wide use of electric furnaces for duplexing. Before the embargo on shipments of scrap to Japan they were using for steel:

Scrap	70%
Pig Iron	20%
Sponge Iron	10%

After the stoppage of scrap shipments they changed to:

Scrap	30%
Pig Iron	30%
Sponge Iron	30%

The sponge iron was obtained from treating low-grade ores in rotary furnaces by the Krupp-Renn process and then duplexing in the electric furnaces.

This practice was followed all over the country, even to the extent of using excess cement kilns. The result was a much greater proportion of electric furnaces in Japan per ton of carbon steel produced than in the United States.

There are indications that there is a request from Russia for a large portion of Japan's more than three million tons capacity of electric furnaces. It is quite probable, however, that the Allied Control Board will, after they learn of the importance of the electric furnace to Japan's iron production, cease to regard such furnaces (as did the N. E. C.) as only a war potential for the production of alloy steels. Under such circumstances the Japanese may be permitted to retain a larger electric furnace capacity than the 2,500,000 tons recommended by the N. E. C. Report.

Copper

The peacetime permissive production of copper suggested is 70,000 tons; about the consumption for 1930 and less than half the annual consumption during the war years.

The N. E. C. Report gives the export of copper from Japan as varying from less than one hundred to several thousands of tons. Domestic mine production is represented as 70,000 to 80,000 M.T. of contained copper, with considerable excess smelting capacity.

The Committee recommends that copper smelting and refining capacities in excess of 85,000 metric tons be eliminated.

Lead

The annual consumption for the period from 1940-1944 was 63,396 tons,

with the lead content of the maximum domestic ore production about 17,000 M.T. and excess smelting and refining capacity.

The N. E. C. recommends

- (1) Facilities with a capacity of approximately 20,000 tons be retained for producing 17,000 tons of lead from domestic ores, or any necessary part thereof.
- (2) Permission to import additional quantities of metallic lead be based upon demonstrated needs as they develop in connection with the production of products for civilian use.

Zinc

The N. E. C. Report gives the 1943 production of refined zinc as 39,000 M.T. consisting of 26,000 high grade and 13,000 low grade; the refining and smelting capacity as 82,300 M.T. consisting of 49,000 high grade and 33,300 low grade. The present refinery capacity is 178,600 M.T. and the Committee recommends that it should be reduced to 40,000 tons.

The maximum mine capacity for recoverable zinc is 30,000 tons and the Committee recommends: "Until the need for importation of ore, or metallic zinc can be demonstrated, any quantities of the metal up to 30,000 tons per year, should come from local production."

Tin

The tin production in Japan in 1932 was only 1,002 M.T. with imports of the same year 3,257 making an apparent peacetime supply of 4,259 M.T. The Committee recommends that the "primary smelting of tin should be eliminated, and only a small amount of refinery capacity (of the order of 750 tons) should be permitted for production of secondary metal from tin dross." Inasmuch as the local mine production of tin had risen to 1,620 tons by 1940, which was refinable in Japan—and to this could be added only 750 tons recoverable from dross—there would still be a deficiency of 1,902 M.T. from the 1931, or peacetime requirements, and there is no explanation by the Committee as to why all primary smelting of this metal should be eliminated.

The Committee recommends: "Imports of metallic tin should be restricted to the minimum level required by tin plate and other peacetime industrial uses," and gives as an approximate figure "depending upon the rate of operations" of the various consuming industries "2,000 to 3,500 M.T. per year."

If the Japanese are permitted to recover and refine tin only from dross it is obvious to those who know of their business acumen that they will develop a large business in the collection of

used tin cans, as they are probably the world's greatest experts in electrolytic detinning and the economic utilization of both tin and iron recovery from this process.

Precious Metals

Although Japan's production of gold and silver has been fair, more than half of the output has come from Korea and very little from independent mining. Of production in Japan Proper most of the gold and silver has been obtained as a by-product of copper and lead smelting operations.

The N. E. C. Report states: "In post-war years it would seem that without artificial stimulus, Japan should be able to supply 15,000 to perhaps 20,000 kilograms of gold worth at the present American prices between \$170,000,000 and \$225,000,000."

Very small quantities of platinum and platinum group metals are obtained as by-products from placer operations or from smelting. There is apparently no possibility of self-sufficiency.

Gem Stones No data.

Manganese

Japan's supply of manganese is inadequate for sustained peacetime requirements, although its annual domestic production had been increased from 12,849 to 92,000 metric tons between 1931 and 1941. Imports increased from 40,316 to 175,000 M.T. during the above period but further imports are most likely to be held under close control for a number of years.

Nickel

Prior to 1930 about half of the 800 tons of nickel imported into Japan annually was consumed by government arsenals and dockyards. Most of the nickel consumption in private industries was for the plating of bicycle rims in Japan's extraordinary production of more than 6,000,000 bicycles annually. Bicycles and bicycle trailers not only filled the streets of Japan but this Japanese product was in evidence in all parts of Asia.

The production of nickel alloy steels had hardly begun in Japan, outside of government arsenals, when the World Engineering Congress was held in Tokyo in 1929. Of more than seven hundred papers presented to the Congress, there was but one by a Japanese which had anything to do with Nickel. One writer reporting on the Japanese steel industry in 1930 referred to the lack of production of nickel alloy steels as due to their being looked upon, by the Japanese, as a military secret.

By 1932 the production of alloy steels had risen to approximately 24,000 tons; by 1937, to 342,705; and by 1942 the planned consumption had reached

1,357,000 tons of commercial alloy steels which would require for production, about 2,200,000 tons of special steel ingots

The above is reflected in the supply of nickel which was mostly by imports, there being no significant nickel deposits in Japan. Prior to 1936 a few tons were produced annually as a by-product, in the form of sulphate, from the copper refineries. The Japanese government stressed the necessity for domestic production of nickel by offering subsidies; however, there was little production in spite of much publicity given to exaggerated claims of success, mostly in the form of ferro-nickel from imported ores.

Ores were imported from New Caledonia and Netherlands East Indies and refinery production was gradually begun in Japan.

The N. E. C. recommend: "It will be necessary for Japan to continue to import nickel, either metal or ores, or both. It would seem reasonable to impose no obstacles to either, but to permit the free play of competition to determine the results."

"This will afford the most ready field for application of the principle of a peacetime economy, based on importation of a minimum of raw materials and applying to them the available energy from hydro power, and the available labor, skill and managerial ability"

"For the production of alloy steels, an estimated 3,000 to 3,600 metric tons of contained chromium may be required, and about 1,000 to 1,500 metric tons of nickel. A few hundred tons each of molybdenum, vanadium and tungsten are indicated." In view of the allowable steel ingot production in Japan of 3,830,000 tons, as announced by the Ministry of Commerce and Industry, it is quite probable that the allowable imports of nickel may be increased considerably above the 1000-1500 tons recommended by the N. E. C. Report quoted above.

The N. E. C. Report included the following remarks regarding the peacetime use of special steels:

"The growth in output of these steels has been rapid as Japanese manufacturers have learned to appreciate quality and in the later years of the war it rose to unexpected heights. The total demand for Japan, Korea and Manchuria grew from 342,705 metric tons in 1937 to 1,357,040 metric tons in 1942, after which no reliable estimates are available. To make these steels, nickel, chromium, tungsten, molybdenum, silicon, manganese and vanadium are all required. While most of the alloy steels were used during the war in making armament, they are also essential to peacetime industries, especially if consumer goods are to be manufactured for domestic use and export. It is in such lines as machinery, machine tools, instruments and light manufactures that alloy steels are most

needed. Take as one example the coal industry, which clearly must be maintained, and in which alloy steels find multitudinous uses in mine water pumps that must be corrosion-resistant, in crushers, mills and pulverizers that require abrasion and impact resistance, and in mine cars and transportation equipment where stretch, impact and wear resistance are essential. Similar studies of other essential peacetime industries have been made and are equally persuasive of the importance of alloy steel in a normal economy."

"In reorienting the industry of Japan toward peace instead of war, certain principles should be kept in mind. In view of the fact that Japan will need to import food, there should be no unnecessary importation of other raw materials. In other words, where there is possibility of manufacturing the basis of domestic raw materials, that is to be preferred. Also, it is preferable that Japan import raw materials rather than finished or semi-finished goods, so that, to the maximum, the power, fuel, labor, skill and management of the country be used in the production of finished goods for domestic consumption or export. "Finally, restrictions should be applied on import of raw materials necessary to heavy industries rather than to the manufacture of consumer goods, if the object of effecting the disarmament of Japanese industry necessary to prevent war is to be met."

Chromite.

The lack of imports of chromite prior to and including 1931 when the domestic production was 9,675 M.T. indicates a sufficient supply for peacetime requirements under present and planned economy. By 1941, the production had reached 50,212 M.T., with imports of 7,500 tons.

The Japanese had produced good quality chromium stainless as well as 18 Cr. and 8 Ni. stainless steels prior to 1936. Their metallurgical research in this field was of a high degree of technical accuracy under the able direction of a group of scientists whose work merited the recognition of world renowned metallurgists. They had also achieved a high degree of skill in chromium plating and in the production of exportable stainless cutlery and surgical instruments.

In view of these facts, it is difficult to follow the reasoning behind the recommendation of the N.E.C.: "No great damage would result to the country by forbidding imports of chromite ore for a limited term of years, although it is not important as a war potential material." Returning to the first principles, the end products of stainless steel, particularly in such items as surgical instruments and cutlery for which there is a growing need in Asia, carry a very high percentage of those cost elements which Japan has to sell: i.e. power, skilled hand-labor and scientific management.

Minor Ferro-Alloy Minerals

The N. E. C. in outlining its recommendations on the control of molybdenum in Japan have included other "minor ferro-alloy minerals—vanadium, cabalt and others—have been used in Japan, as elsewhere, but the tonnages and values involved are not important.

"While the ferro-alloy minerals are essential to the continuance of industry in Japan, all the more so if steel consumption is to be channelled into the manufacture of consumer goods, the actual tonnages involved are not large and any necessary control of their movement should be easily effected. Electric furnaces of one type or another, themselves large consumers of special steels, have been largely used in the reduction of these ores and the production of the ferro-alloys, so that a system of licenses would control the largest part of the production. However, blast furnaces may also be used so that such control would not be complete and a better means would be by licensing imports. The simplest way to make this effective would be by control of the customs in some such manner as the Chinese Maritime Customs were long managed under British supervision. As previously suggested, however, it is doubtful whether any, and at most more than a temporary, control is desirable in the field of ferro-alloys or the ores from which they are made."

Minor Metals

Other minor metals such as arsenic and bismuth are recovered as by-products from copper, gold, silver and lead smelting. About half of the arsenic produced in pre-war times was exports after supplying the domestic consumption for insecticides which was considerable.

Notwithstanding the generally accepted military importance attached to arsenic as a base for the production of the "surprise" poison gases, the N. E. C. restricting it (arsenic)".

Molybdenum

There is nothing to indicate a domestic sufficiency of molybdenum in Japan. Its past production has been from Korean ores, where deposits though small was widespread.

The Foreign Minerals Quarterly of October 1945, reported:

"The output in Japan is small and comes mostly from the Hirase mine in Gifu Prefecture and the Yamasa mine in Shimane Prefecture. The Hirase mine, largest producer of molybdenum in Japan, was to double output by taking flotation machines from gold mines. Yamasa mine, Shimane Prefecture, owned by Set-suro Takeuchi, produced 6,000 kilograms of molybdenite in 1935."

The total production in Japan, for three years, 1934, 1935, 1936, amounted to only 18 M. T.

Vanadium

There are no data available to the writer on production. One reviewer on the mineral resources of Japan states that "only very small amounts are available" in Japan

Tungsten

Japan's supply of tungsten ore is insignificant. Domestic ores have been supplemented by supplies from Korea, China and Burma. The production of tungsten oxide (55% WO₃) in 1931 was reported as 52 M. T. which had increased to 957 tons by 1941. Japan had control of Korean production during this same period and it increased from 16 tons (60% WO₃) in 1931 to 2600 ton in 1941.

Forty percent of the domestic output is said to come from the Otani-Kamaoka mine in Kyoto.

The Engineering and Mining Journal of August 5, 1922 (p. 244), reports tungsten mines in Japan at:

1. Takatori, Ibaragi Province: Production 1917 of 10,726 tons of ore, containing 1.3% tungsten.
2. Ebisu Mine, Gifu Province: Production 1917 of 6,241 tons of 1.32% ore.
3. Kiwada Mine, Yamaguchi Province: Production 1917 of 12,420 tons of 2.18% ore.
4. Kuga Mine, Yamaguchi Province: 1917 output 20,019 tons of 1.346% ore.
5. Jutoku Mine, Yamaguchi Province: 1917 output, 3,060 tons of 3% ore.

Recently there has been a report of the discovery of a deposit of 70% tungsten ore on Teijima Island in the Inland Sea, but there has been no reliable confirmation.

The N. E. C. are in favour of admitting a small supply of ore imports.

Mercury

Japan had obtained almost a corner on the world supply of mercury prior to and during the early war years. The domestic production has been very small, but consumption during the war rose rapidly.

The N. E. C. recommends that "any restriction found necessary can be accomplished through control of imports."

Uranium: No data.

Antimony

Japan's deposits of antimony ore are sparse but in the past, excepting the war years, there has been an

ample supply of ore from China, the world's principal source, from which Japan imported an annual average of 2,638 M. T. during the years of 1931 to 1937.

The N. E. C. favors continued (August 5, 1922, p. 243) refers to the Ichinokawa Mine in Ehime Province as producing, in 1917, 8,442 tons of antimony 2.72% ore.

Bauxite

There are no bauxite deposits in Japan. Prior to the war the Japanese obtained 20,000 to 30,000 tons of bauxite from Palau in the Mandated Islands and some from Northern Korea.

Aluminum shale was obtainable in Manchuria and used by the Japan-Manchu Aluminum Company with indifferent results. Accordingly the bulk of the large supply of bauxite needed for Japan's remarkably rapid development of the aluminum industry was obtained from Malaya and the Netherlands East Indies until cut off by U. S. submarines.

The N. E. C. recommends the prohibition of imports of bauxite as hereinafter reported under aluminum.

Apatite (Phosphate Rock)

There is no domestic supply of phosphate rock in Japan but the demand for an adequate supply to produce superphosphate is imperative.

The imports into Japan of phosphate rock from all sources rose from 720,110 M. T. in 1930 to 1,190,067 tons in 1935, with about one-third being supplied from the Mandated and other islands of the Pacific.

The N. E. C. Report estimates: "To operate the superphosphate plants of Japan at pre-war capacity will require 800,000 tons of rock per year. It would seem wise so far as possible to allow the source at supply to be determined by ordinary economic and commercial considerations."

The N. E. C. gives the average annual production and estimated needs of all fertilizer materials for the year 1940-1945 as:

Fertilizer

	Average Annual Production 1940-1945 (Metric tons)	Estimated Annual Needs
Sulphate of Ammonia	946,000	800,000
Calcium Cyanamid	177,000	200,000
Nitrate of Soda	0	30,000
Superphosphate	792,000	900,000
Synthetic Phosphates	164,000	175,000
Phosphorite	1,700	700,000
Sulphate of Potash	0	45,000
Muriate of Potash	0	40,000

Other Potash Fertilizer	18,700	20,000
Soya Bean & Oil Cake	199,000	600,000
Fish Cake and Fish Meal	94,000	200,000

Magnesium

Japan's magnesium production paralleled the rapid pre-war and wartime development of the aluminum industry.

Year	Production in M. T.
1935	313
1936	680
1937	907
1938	1,270
1939	1,950
1940	3,084
1941	2,676
1942	2,812
1943	4,128
1944	4,808

Japan's magnesium industry differs from the aluminum industry in so far as there is an ample local supply of raw material from the extraction of magnesite from sea water. Considerable quantities of the above mentioned production were produced from Manchurian magnesite.

An estimate of one million pounds is given by N. E. C. as sufficient to cover Japan's peacetime needs.

As Japan's magnesium production was obviously for war purposes it is proposed, by the N.E.C. to subject this industry to the same controls

recommended for aluminum, i.e., that:

- (1) All Japanese magnesium production facilities be eliminated by demolition or removal.
- (2) Essential peacetime needs for magnesium chemicals be supplied from domestic raw materials, but electric power requirements so controlled as to prevent metal production.

Essential magnesium chemicals for medicinal and industrial uses can be manufactured from domestic raw materials subject to direct control of electric power requirements to prevent any metal production therefrom.

Pyrites

The Foreign Minerals Quarterly (October 1945) states that Japan is probably the greatest producer of iron pyrites in the world. The scarcity of iron gives the Japanese an additional incentive for its recovery as a by-product from the manufacture of sulphuric acid from iron pyrites.

Of the fourteen mines producing iron pyrites five are responsible for about 75% of the country's output. Similarly of twenty-seven mines producing copper pyrites three mines account for 50% of the total output.

These principal mines are listed with their 1935 production as:

Iron Pyrites		
Yanahara mine at Okayama	442,043	M. T.
Matsuo " " Iwate	251,448	"
Besshi " " Ehime	181,572	"
Hitachi " " Ibaraki	112,474	"
Takara " " Yamanishi	48,307	"
Copper Pyrites		
Shirataki mine at Kochi	47,426	M. T.
Iimori " " Wakayama	46,326	"
Makamine " " Miyasaki	41,001	"

Aluminum

Japan's aluminum production was negligible prior to 1936, consisting mostly of the semi-successful products of Korean alunite and Manchurian shales, there being no bauxite in the Home Islands.

From 1935, production of aluminum from bauxite imported from the Netherlands East Indies was begun and continued on a rapidly increasing scale as evidenced by the following:

Year	Aluminum Production (M. T.)
1935	4,434
1936	6,664
1937	14,515
1938	22,226
1939	29,410
1940	40,820
1941	71,668
1942	103,419
1943	141,524
1944	110,220

The N. E. C. estimates Japan's peacetime requirements of aluminum at about ten to fifteen million pounds (4536 to 6704 M. T.) yearly and recommends:

- (1) All alumina producing plants and all aluminum smelting plants within the borders of post-war Japan be eliminated by either demolition or removal.
- (2) Importation of bauxite or any other aluminous ores be prohibited, except for a limited amount to be used as such for other than smelting of aluminum, as provided for hereinafter. (Recommendation 7).
- (3) The control of the aluminum industry may be regulated through the allocation of electrical energy and regulations developed to cover its distribution. Should any aluminum smelting be permitted, this

would become an important control; with the elimination of all aluminum smelting, this would have direct controlling application to the fabrication of aluminum.

- (4) The fabrication of aluminum in post-war Japan be restricted to light industry such as the manufacture of civilian consumer goods. The control in this case may be exercised by the limitation as to the size and type and quantity of manufacturing equipment permitted and the control on the importation of aluminum, (Recommendation 5).
- (5) A quota for the quantity of aluminum and aluminum scrap to be imported by Japan be determined by competent authorities. This quota should be flexible and subject to periodic review and adjustment. For the nearby term, a figure of approximately 4,000 metric tons is recommended.
- (6) All aluminum in any form including scrap now on hand in Japan, be seized and distributed in accordance with the foregoing.
- (7) The quantity of aluminum used as such and aluminum compounds normally used in peacetime in such industries as the ceramic, manufacturing and chemical industries be determined by competent authorities and a quota based thereon, and that such items be admitted only up to this quota. The total amount of aluminum contained in such alumina and aluminum compounds is small and without smelting facilities could not be converted into metallic aluminum.

Sulphur

The output of sulphur in 1936 was about 175,000 tons, which is nearly three as large as that in 1927. Of the yield, some 65,000 tons were shipped to New Zealand, Australia, British India, Manchukuo and China. The supply and demand in recent years have been as follows:

Year	Output	Export	Domestic Consumption
1932	84,530	25,997	58,533
1933	114,426	32,114	82,312
1934	135,412	45,710	87,702
1935	152,019	54,605	97,412
1936	175,000	65,000	110,000

Sulphur production was reported to have increased to 200,000 tons during the war, mostly from two mines in Southern Hokkaido and one in Northern Honshu. A large supply of sulphurs for acid making was obtained from copper pyrite and low-grade copper sulphide concentrates as well as from sulphur fumes from copper, lead and zinc smelting.

Minor Minerals

Other industrial minerals such as mica, asbestos, graphite, quartz crystal, limestone and various other minerals are found in Japan in small quantities but are workable by low-priced labor to a degree suitable to the general development of the land.

Mica

The mica deposits are poor with little or no production of strategic grades. The last production figures available are for 1925, which were given as 1,082 metric tons against average imports of 680 tons for the ten years 1933 to 1942.

Asbestos

The asbestos production data are not available, but estimates indicate about 1,000 M. T. against average imports of 23,185 for the ten years, 1932 to 1941.

Graphite

Although Korea is famous for its graphite production there has been a limited quantity produced in Japan of from 1,000 to 1,500 tons against an average import of 3,148 tons in the ten year period 1929-1938.

Gypsum: No data.

Limestone: Self-sufficient. No data.

Fluorspar: Most of Japan's supply of fluorspar has been imported from Korea and Manchuria.

The N. E. C. Report recommends: "It is desirable to permit and encourage the Japanese to go as far as they can, in the manufacture of clay goods of all classes from firebrick to china and art pottery. The necessary materials are present, sufficient fuel is available, as is the skill and temperament of the workers. Here is an excellent field for Japanese industry in working up into finished goods raw materials of which only very small amounts need to be imported and which are readily salable in world market to establish foreign exchange."

Sodium (Salt)

Domestic production has been more or less consistently held at about 600,000 M. T. years while the consumption increased from 10,000,000 M. T. in 1930 to 3,000,000 in 1941, supplied mostly by imports from Korea, Formosa, China and some from Egypt and East Africa.

The N. E. C. Report states: "The control of salt supply is one of the most effective devices that can be used when it can be applied, as the Japanese did in conquering the hill tribes in Formosa. However, since salt is the basis for the soda ash and caustic soda industries, that are required for soap, rayon and textiles, there would seem to be no valid reason for shutting off the supply to these peacetime chemical industries."

Cement

Cement works were one of the first industries established by the Japanese government after the restoration in 1868. The government pilot plant was turned over, in the late 70's, to Mr. Otsuchi Asano and formed the basis of the Asano fortunes leading to ships, steel and other industries.

The Japanese success in cement production throughout the Meiji period (1868-1912) led them to aspire to become important factors in world production, particularly as suppliers to Asia.

By 1936 their production had reached 6,232,206 M. T. which was practically 511,000 tons monthly while their mill capacity at that time was estimated to have been sufficient for double this quantity.

All the beginning of the war with China, in 1937, government restrictions on production were imposed on the industry, mostly as a measure for the conservation of power, but the excessive rotary furnace and mill capacity also became important factors in the reduction of low-grade nickel, iron and other ores, by the Bassett and Krupp-Renn processes.

Some of the excess cement mill equipment was shipped to Manchuria and North China and it was reported that during the war these furnaces were used successfully for the production of sponge iron from the scrap iron formerly imported from U. S. A.

It is obvious that for some time to come the Japanese will need, for the rebuilding of their cities, all of the cement they can produce, but in time they are certain to make this one of their exporting industries.

VII. OTHER BASIC INDUSTRIES

Brief outlines are given in the following pages of seven basic industries, viz.: Power, Transportation, Machinery, Chemicals, Agriculture, Food, Textiles.

A. POWER

The increase in Japan's electric power facilities between 1932 and 1936 was far greater in the thermal than in the hydro-electric field. Later data indicate a greater increase in hydro-electric than in thermal capacity, as follows:

	Hydro-electric K. W.	Thermal K. W.	Total K. W.
1939	4,640,212	2,698,571	7,338,783
1940	5,124,715	2,894,139	8,018,854
1941	5,361,134	2,970,048	8,331,182
1942	5,546,468	3,014,806	8,561,274
1943	5,711,582	3,009,480	8,721,071
1944	5,909,460	2,962,604	8,872,064
1945	5,876,000	2,919,000	8,795,000

Although the N. E. C. Report states: "It is important that major reduction in power production be in thermal plants" and gives adequate reasons therefor, the Report at the same time admits the necessity of an "on-the-spot" survey and that "power for limitation of Japan's activities will have to be done on a cut-and-try basis." The N. E. C. Report further recommends: "The removal of equipment down to pre-determined levels should be accomplished slowly."

It is interesting to note that in the reduction of Japan's power plants for reparations, as reported by the Japanese Ministry of Commerce and Industry, thermal power plant removals only are reported as 1,373,200 from 2,872,630 leaving 1,499,430.

B. TRANSPORTATION

Transportation and communications rank fifth in the occupational distribution list for Japan, with 945,000 workers.

Owing to the compactness of the populated areas of Japan, and par-

ticularly the density along the Eastern slope of Pacific Coast section, the country is fairly well provided with railway transport arteries of low mileage but serving the bulk of the population and industries.

There was little or no provision for increase in railway transport facilities to meet the demands for moving troops and materials commensurate with their accelerated activities during the prewar and war periods and as a result the overburden on rails proved to be a heavy handicap.

About 75% of the railroads were government-owned and operate, and it must be said that with so much obsolete equipment all line were operated very efficiently in the prewar period when an express train five minutes late was "news" for the press.

A system of military highways had been constructed but they were, even in the prewar years, incapable of relieving the strain on rails.

The following statistics are for 1939:

Railroad—operating line	(K. M.)	24,843
Passenger mileage	(K. M.)	118,575,546
" earnings	(Yen)	487,220,119
Freight mileage	(K. M.)	94,681,303
" earnings	(Yen)	354,612,224
Tramways—operating lines	(K. M.)	2,346
Passenger mileage	(K. M.)	406,111,629
" earnings	(Yen)	120,183,527
Freight mileage	(K. M.)	6,636,053
" earnings	(Yen)	1,251,623

The higher passenger mileage on the low mileage tramways and the lower passenger earnings of the tramways in comparison to the railways, are eloquent reminders of the over-crowded trams in Japan.

The statistics covering the commodities hauled by the state railways in 1938, reflect the rural economy of the country:

Commodity	Amount in M. T.
Rice	3,169,000
Other grains	1,156,000
Timber	9,695,000
Charcoal	1,257,000
Coal	38,525,000
Ores	4,541,000
Iron and Iron ore	1,785,000
Fertilisers	3,895,000
Cotton goods	513
Cement	1,402,000

The statistics on highways in Japan include all kinds of roads, which make them unreliable. Japan's highway system as a whole is very primitive. Most of the roads are quite archaic, uncoordinated and heterogeneous. Only in the metropolitan areas are good roads to be found and even these are inadequate for the limited number of motor vehicles in the country.

As previously mentioned Japan's war plans did not seem to contemplate a coordinated system of land transport. The national roads which are most suited to motor traffic covered 8,146 miles in 1932 and only 8,617 in 1939.

The prefectural roads in the same period increased from 99,257 to 114,466; the municipal roads from 37,063 to 56,863, while town and village roads decreased from 806,123 to 735,376. The latter are hardly worthy of the name of roads in the modern sense.

The total number of motor vehicles in operation in Japan is very low notwithstanding the impetus given to motor car production by the presence in Japan of the assembly plants of Ford and General Motors.

The increase in the number of motor vehicles in operation between 1930 and 1940 was:

Types	1930-33	1940
Passenger cars ...	56,173	106,000
Trucks	30,976	50,000
Buses	9,202	29,800
Motorcycles	35,419	62,900
Total	132,370	248,700

It must be noted that of the above about 87% of the passenger cars represented taxis; and the "motor-cycles" were almost entirely of the three-wheel parcel carrying type designed with a 3' x 1' parcel box suitable not only for carrying light parcels for commercial service but also adaptable for carrying munition on the battlefield. It is also significant of the trend in the prewar years to note that all of the chauffeurs of the three-wheelers were enrolled as military reservists.

The lag in road building and highway transport in general was in great contrast to the forward policy of the country in connection with their marine transport service, which, was heavily subsidised by the national treasury. In the prewar period Japan's merchant marine expanded more rapidly than that of any other nation, i.e. nearly 32%, as compared with 6% for Germany. The tonnage of vessels of over 15 knots was nearly doubled between 1929 and 1936.

Further, Japan's tramp steamers traded with over fifty countries. Some of these vessels did not return to the homeland more often than once in nine years but the profits on their service was a very important item in the country's invisible exports. Subsequent events disclosed other national interests served by this fleet of nearly 60 tramp steamers.

It is also worthy of note that in the early thirties about three-fourths of Japan's overseas trade was carried in her own ships. Japan's total 1938 tonnage, registered and unregistered, was 6,685,987 tons as compared to the U.S. tonnage of 11,362,000 and the British Empire's 21,000,000. It was 50% more than the tonnage of Norway or Germany, double that of Italy, the Netherlands or France.

Commercial airlines in Japan were behind those of all other modern countries, covering, in 1938, a total distance of only 16,212 K. M. carrying 73,684 passengers, 302,505 Kg. of freight and 829,051 Kg. of mail.

C. MACHINERY

Prior to the war there was considerable confusion among students of Japanese industrial economics because of the Japanese statistical classification of almost everything made of metal as "machinery and tools." Ships, locomotives, hammers and saws, as well as machine tools were included to a point where one statistician by dividing the value of production by the number of units produced, and assuming that "machinery and tools" was meant for "machine tools" concluded that the unit value of the Japanese machine tools produced amounted to Yen 117.

The veil was finally lifted from such confusion, and, even as early

as 1943 we were able to list 444 machine tool builders in Japan with only 100 producing modern machine tools worthy of consideration, 46 producing fairly high-grade products, 20 companies producing 65% of the machine tools of note and 5 companies producing most of the machine tools of strategic importance,

Notwithstanding the wide publicity given by the Japanese prior to the war to the decentralisation of their machine tool industry, it was found that about 40% was concentrated in the Tokyo area, 26% in the Osaka area, 19% in Nagoya and only 11% in the hinterland at Niigata.

Like other strategic industries the production of machinery and machine tools received an extraordinary impetus in the prewar period, not only in the quantity produced but there was a corresponding advance in the nature and quality of the products. This was so marked that there were many engineers in the West with experience in Japan prior to the thirties who could not be convinced of the extent of Japan's improved status in this industry.

The large well equipped machine tool plants erected after 1931, by members of the Zaibatsu, such as the Hitachi Works, the Shibaura, Ikegai, Mitsubishi, et al were not only modern to the last degree but they were equipped to produce such important machine tools as jig borers, gear shapers, gear measuring machines, precision grinders, etc.

The N. E. C. Report states: "According to the best available inventory there are 77,939 machine

Number of Factories	1931	1937
Number of Workers	5,850	14,636
Value of Production	158,000	692,000
	US\$214,000,000	US\$639,250,000

The report by the Japanese Ministry of Commerce and Industry on the reduction of the machine tool industry for reparations gives the following:

	Pre-war	Reparations	Retained
Machine tool factories	304	90	214
Machines	32,163	15,279	16,884
Capacity (units)	51,000	24,600	23,400

D. CHEMICALS

Japan's most spectacular advance towards industrial self-sufficiency in the post-depression and prewar period was registered by her heavy chemical industries. Between 1931 and 1937 the number of

factories increased from 3,137 to 5,820
workers increased from 122,000 to 374,000 and

tools in operative condition in the arsenals of Japan. In the aircraft industry it is estimated that there are approximately 400,000. Tools in the so-called civilian industries number about 619,000, bringing the total to something more than 1,000,000. With the elimination of war activities, including the production of aircraft, it is apparent that a substantial reduction in the number of tools is both feasible and advisable.

"The present potential capacity for the production of machine tools is placed at 20,000 to 25,000 units per year. Twenty companies, of which five predominate, have most of the producing capacity. Prior to the war, numerous machine tools were imported to serve as models and patterns, and the Japanese industry is reported to have been reasonably successful in duplicating them.

"It is recommended that the machine tools installed in the arsenals and aircraft plants be eliminated along with those in industrial establishments which have functions mainly in support of the war potential of Japan. The estimate for such reduction may be around 50%. As to the machine tool industry, a production of 20,000-25,000 units per year probably will not exceed the annual replacement requirements when peacetime industry is well under way, and such replacements should be permitted."

Japan's increase in the growth of the machinery and tool industry between 1931 and 1937, follows closely that of the advance in other heavy industry.

	1931	1937
	5,850	14,636
	158,000	692,000
	US\$214,000,000	US\$639,250,000

value of production increased from \$205,450,000 to US\$729,250,000

These figures include all branches of the chemical industry such as rubber, glass hydrogenation of coal and other items which accounts for less than one-third of the production.

The N. E. C. Report states: "Much of this and subsequent expansion during the war was in the nitrogen, sulphuric acid and calcium carbide industries, which contributed directly to war production and which, therefore, must be considered as key commodities in any program of industrial disarmament.

"Japan's chemical industry is based largely on available raw materials—coal (non-coking), sulphur and pyrite, chrome, limestone and magnesite (from Manchuria). It lacked and must therefore im-

port salt, phosphate rock, potash, petroleum and rubber. A fairly abundant supply of hydroelectric power and ready access to mineral resources of Japanese dominated areas in China and Manchuria helped to make up these deficiencies."

Sulphuric Acid

In 1938 Japan had a daily production capacity of 3,500 M. T. of 100% sulphuric acid by its contact process plants. It is assumed that all plants have been operating on gases from pyrite, zinc blende or copper roasters, or by the use of crude sulphur containing 50% or more of inert material.

The output of fuming sulphuric acid required as a war material increased from 12,175 M. T. in 1933 to 195,710 M. T. in 1938.

The N. E. C. Report states: "Were it possible to eliminate all oleum production and confine the sulphuric acid industry to ordinary concentrations, the control problem would be greatly simplified. If later it is found that certain medicinals or other essential chemicals require small amounts of oleum in their manufacture, its manufacture may be permitted under license and strict control. Oleum cannot be imported satisfactorily.

"Sulphuric acid in sufficient quantity to produce Japan's requirements of superphosphate and ammonium sulphate for fertilizers, for the manufacture of rayon and synthetic fiber, for petroleum refining, for the pickling of iron and steel, in electric storage batteries, in electrolytic refining of copper and zinc, and in the manufacture of chemicals for peacetime use—will require careful integration based on figures that are not yet available in sufficient detail. Prior to the war about 60% of the sulphuric acid produced in Japan was required to manufacture ammonium sulphate and superphosphate. Since the output of neither of these essential fertilizers will likely be curtailed, it is estimated that at least 2 million tons of 50° acid will be required for these vital uses. Other uses will require about 750,000 tons so that a maximum output of about 2,750,000 tons from a total plant capacity of 3,000,900 tons of 50° acid (1,365,000 tons of 100 percent acid) should be adequate. It is, therefore, recommended that;

1. The Japanese capacity for the production of sulphuric acid in excess of 3,000,000 tons per year of 50° acid should be eliminated, first at all military arsenals and explosive peacetime industries.
2. The manufacture of the permitted quantity of acid be by

the contact rather than by the older chamber process for the following reasons:

- (a) Contact acid produces a better grade of ammonium sulphate.
- (b) Chamber operation requires the consumption of a certain amount of ammonia which will be needed for the fertilizer program.
- (c) Contact plants, if damaged, can be put back into operation without the extensive use of sheet lead or skilled lead burners required for chamber process plants.

3. Production of oleum and fuming sulphuric acid should be eliminated as a war hazard, or if found essential for certain restricted uses, its manufacture should be licensed, but all existing capacity should be dismantled or destroyed.

4. Since sufficient raw materials are readily available within Japan Proper in the form of pyrite, crude sulphur, zinc blende, sulphide copper ores, etc., it will not be necessary to control the production of these materials insofar as they used in sulphuric acid manufacture."

The report by the Japanese Ministry of Commerce and Industry on the reduction of sulphuric acid plants for reparations shows for catalytic and lead chamber methods respectively (ton capacity):—

Present	Removal	Retained
1,911,140	693,252	1,217,888
3,901,921	693,252	3,208,669

Fixed Nitrogen

The estimated capacity of Japan's synthetic ammonia industry in 1944 exceeded 450,000 M. T. of nitrogen besides ten calcium cyanamid plants with an annual nitrogen fixation capacity of 90,000 M. T. and by-products ammonia from coke-oven and other gas plants of an additional 20,000 M. T. or a total nitrogen output of 560,000 metric tons. These figures include the capacity of the large nitrogen fixation plant at Kozen in Korea which is now in territory occupied by U. S. S. R.

According to data prepared by the U. S. Tariff Commission the U. S. Department of Agriculture as well as industrial sources, the 1944 capacity for Japan including Korea and Manchuria was 380,000 short tons of nitrogen.

The N. E. C. Report recommends that the synthetic ammonia plants, because of their threat to peace, must be destroyed or drastically reduced to the minimum needed for food production. On the other hand the Report recommends as follows:

"Calcium cyanamid is consumed almost entirely for agricultural purposes, however, and since these plants cannot be readily diverted to war production, they should be operated to the fullest possible extent in order to make up for other deficiencies in fertilizer production. By-product nitrogen is related directly to coking operations and its output will be reduced in proportion to the curtailment of the Japanese iron and steel industry.

"With the foregoing objectives in view, namely, eliminating war potential without unduly crippling the output of fertilizers needed for essential food production, it is recommended that:

1. The synthetic nitrogen production of post-war Japan be limited to 180,000 metric tons of nitrogen per year of which 90,000 tons shall be produced as calcium cyanamid and the remainder supplied by synthetic ammonia plants, preferably those using hydro-electric power for the production of the necessary hydrogen.

2. All production capacity for nitrogen fixation as synthetic ammonia in excess of 90,000 metric tons be eliminated by destruction or removal. Related equipment suitable for hydrogenation of coal, oils or other organic materials for the production of alcohols, synthetic fuels, etc. should likewise be eliminated.

3. Japanese citizens and nationals, corporations or the Japanese government or any agents thereof, be prevented from obtaining complete or partial control of any financial interest in any nitrogen fixation plant in any other countries.

4. Synthetic ammonia and related high-pressure plants all require heavy steel and alloy forgings as essential parts of their equipment. The same steel mills that produce these heavy forgings and castings produce armament, heavy artillery pieces, gun carriages, etc. If the iron and steel industry were prevented from the use of such facilities, it would be difficult or impossible to rebuild the synthetic ammonia, alcohol and fuel plants."

Calcium Carbide.

Japan produced 381,000 metric tons of cyanamid in 1937, which required 301,000 tons of carbide. The N. E. C. Report recommends:

"On a basis of 21 per cent of nitrogen contained, the 380,000 metric tons of cyanamid would yield 80,000 of nitrogen. The capacity of the Japanese cyanamid industry is 90,000 metric tons of fixed nitrogen

from which a production of 80,000 tons would logically be expected. This is approximately the amount of nitrogen from cyanamid recommended for fixed nitrogen."

The following measures and methods of control are recommended.

1. That the Japanese calcium carbide industry be limited to an aggregate capacity to produce yearly 360,000 metric tons from supplies of electric power from time to time available, and in each year to produce no more than that amount.

2. That the Japanese calcium cyanamid industry be permitted an aggregate capacity to produce yearly 80,000 metric tons of contained nitrogen in form thereof, and in each year to produce up to that amount of contained nitrogen from permitted capacity of 90,000 metric tons.

3. That a calcium carbide-calcium cyanamid control commission be established and authorised from time to time to inspect all plants in Japan wherein calcium carbide, calcium cyanamid or both may hereafter be made. To control the operation of such plants to the extent necessary to limit their outputs of calcium carbide and cyanamid to the yearly aggregate amounts provided for above and, by license, to control the manufacture, distribution, sale, exportation and importation of such outputs."

E. AGRICULTURE

While Japan's urban population has doubled from 18,000,000 to 36,627,000 between 1920 and 1940, her rural population decreased from 37,000,000 to 36,487,000 in the same period. To express it in another way, the urban population amounted to 32.2% in 1920 while the rural amounted to 67.8% and by 1940 the position was reversed so that the rural was 49.9% and the urban 50.1%.

This is a vivid reflection of the advance in the industrialization of the country in building up its war potential, but the next question that occurs to even the casual observer is, who tilled the soil during and after this change so as to feed, in 1940, a total population of 73,114,000 with a rural population of 55,900,000 in 1920?

The question raised above becomes still more interesting when we find that there was no change in land area under cultivation in Japan between 1920 and 1940, it being 14,906,476 acres in 1920 and 14,892,868 acres in 1937.

The problem is increasingly interesting in noting the production values for agriculture. Unfortunately—

ly our production data are incomplete, having nothing as far back as 1920. It is startling to note, however, that even from 1932 to 1937 the value of agricultural production increased from \$687,555,000 to 1,082,043,000.

It is well known that the nature of rice cultivation in Japan, mostly by irrigation, does not permit of the use of machinery so that may be ruled out as a means of increasing the yield. The Japanese government appropriated several hundred million yen between 1920 and 1940 for breaking up the thousands of small plots and turning them into larger units but while this would increase the yield it would also require an increase in labor, which does not fit into the picture.

The Japanese conducted an intensive campaign for increasing the yield by a more liberal use of artificial fertilizers which must have been successful to judge from the figures shown above.

As the Japanese diet is composed mostly of rice, supplemented by fish and vegetables, it is customary to measure the food supply of the country by its rice consumption, which for many years has been about one koku (5.1 bushels) per capita per annum. This means that the national rice crop must average yearly about the same number of koku as the population of the country. Inasmuch as the population has been increasing at the rate of a million per year the rice crop has had to be augmented by that number of koku yearly.

Up to 1930 Japan had not produced enough rice to feed her population but in that year there was an over supply which resulted in a change in the country's economy towards the storage of unhulled rice in various rice-producing centers. The government purchased excess crops and held them for release in lean years.

At the same time Korean and Formosan rice was imported to make up any deficiency in the supply. Thus, has Japan been able in recent years to obtain a sufficient supply of rice.

Unless arrangements are made to admit Korean rice in the future there will result a serious economic problem in connection with rice.

Inasmuch as our survey is primarily concerned with the mineral industry, the importance of including a reference to agriculture might be questioned. It is generally accepted by industrial economists in Japan, however, that to understand steel production in that country one must understand labor and to understand labor one must understand rice.

F. FOOD

Like its parent industry agriculture, food is so generally scarce in all oriental countries that it forms

a major problem to the development of industry.

Japan is, of all countries in Non-Soviet Asia, most favored with an abundant supply of fish in nearby waters to supplement its rice diet. Also her people have the energy and intelligence to catch and preserve it for off-season use.

The annual per capita consumption of fish in Japan is 65 lbs. against 25 in Germany and 45 in Great Britain. However, the German per capita consumption of meat is 100 lbs., the British 130 and the Japanese only 5.

Fishing in Japan is a major national industry giving employment to about 20% of the population. The value of the catch for Japan Proper was, in 1939, Yen 402,700,000 and of the manufacture of marine products 462,700,000 or a total of Yen 865,500,000. The fish catch of Japan Proper is about one-fourth of that of the world total. As an income producer marine products are third in the list of Japan's exports, with silk first and cotton yarns second.

Twenty percent of Japan's fishing fleet of 354,729 boats in 1939 were under power with the number of powered boat constantly increasing and the sailors decreasing. The number with engines in 1927 was 20,797; by 1939 those with engines had increased to 71,539. There is a tendency to modernize these boats by replacements and in many cases they have been equipped with modern alloys resistant to sea water.

The animal industry of Japan has had many handicaps such as the Buddhist aversion to the slaughtering of animals and use of meat as a food, land slopes available being too steep for grazing, but most of all the prevalence in Japan of bamboo and other coarse grasses which are unnutritious and even dangerous to cattle. This is particularly true with regard to sheep. There is also a dearth of land area suitable for raising corn to fatten the stock for profit.

Notwithstanding all of these handicaps there has been during the years 1929 through 1939, a small increase in the number of families keeping animals, in cattle and milk production, and in the live stock industry in general. This was most notable in the production of milk which increased from 19,306,587 gallons produced in 1929 to 40,737,476 in 1939.

G. TEXTILES

The textile industry was not among the strategic group abnormally developed during the prewar and war periods.

This industry is most interesting to our survey as, next to silk, it is the most important of Japan's profitable exports so necessary to obtain the

foreign exchange with which to purchase raw materials needed for industrial production in Japan.

The textile industry must import all of the cotton which it uses. It is outstanding illustration of Japan's basic economy of making up for her deficiency in raw materials by importing for the purpose of selling her own supply of labor, power and intelligent management.

Notwithstanding Japan's general policy of non-development textiles in the prewar years, the record shown an increase from 1931 to 1937 of:

	Number of		Value of
Year	Factories	Workers	Production (Yen)
1931	20,965	899,000	1,803,000,000
1937	28,133	1,095,000	4,242,000,000

The Allied Control Board has granted Japan a loan of \$30,000,000 for the purchase of U.S. cotton for use in the rehabilitation of her textile industry and incidentally to obtain foreign exchange necessary to help start her general industrial machinery.

VIII. CONTROL OF SCIENTIFIC RESEARCH

The N. E. C. Report makes the following recommendations:

1. Japanese research and development on items for military application should be absolutely debarred. Existing laboratories which have served the war purpose primarily should be dismantled or adapted to peacetime projects. No new ones shall be started and severe penalties imposed for any attempted evasion of these regulations.
2. Laboratory and research production of peacetime materials and processes which might have military implications, should be rigidly controlled by a system of control permits.
3. Pilot plant construction or new engineering undertakings generally, including field trials of new devices and testing of new processes, products, models, etc. must also be controlled by licensing and be passed upon by the control authority.

In addition to the foregoing the N. E. C. Report recommends:

"The complete elimination and prohibition of all activities relating to research and development on the manufacture of atomic weapons, and in connection with all phases of nuclear energy, must be rigidly enforced as the first essential of any progress for the disarmament of Japanese war potential industries."

